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Scarbrough--Spaw:
OR A
DESCRIPTION
OF THE
Nature and Vertues
OF THE
Spaw at Scarbrough
YORKSHIRE.

Also a Treatise of the Nature and Use of *Sea*, *Rain*, *Dew*, *Snow*, *Hail*, *Pond*, *Lake*, *Spring*, and *River-Waters*,

Where more largely the Controversie among Learned Writers, about the Original of Springs is disputed. To which is added a short Discourse concerning Mineral Waters.

Corrected and Augmented throughout the whole, together with an Historical Relation of Cures done by the Waters.

By *Robert Wittie* Dr. in Physick.

York, Printed by *A. Broad* for *Tho. Passenger* at the three Bibles on *London-bridge*; and are to be sold by *Richard Lambert* at the *Crown* in the Minster-yard. 1667.

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Imprimatur.

Joh. Garthwait Reverendiſſimo in Chriſto Patri, ac *Domino, Domino Richardo*, Archiepiſcopo Eboracenſi, a Sacris Domeſticis.

Jan. 26. 1666.

B L

To the Right Honourable and truly noble Lords, *James Earl of Suffolke*, and *John Lord Roos*, Son and Heir Apparent to the Earl of *Rutland*.

My Lords,

I *AM not now commending* Scarbrough Spaw *to your Lordſhips, I know I need not; It has left its Teſtimony within You: This which now doth bear that Title, I cannot. But as the many Noble Favours and Reſpects which your* Lordſhips *vouchſafed to ſhew me there, and the Encouragement I have from* You Both *to publiſh this ſecond Edition, do ſtrictly challenge this publick acknowledgment of my humble Thanks: So your* Lordſhips eminent Humility, *in the Free Expoſal of your Caſes to publick view for common Good; and Your* Great Juſtice *in owning the Waters, which* God Almighty *bleſſed as the cheif means of yaur* Lordſhips *better Healths, will juſtly merit thanks from* many Others, *who labouring under the ſame maladies, will be hereby encouraged to apply themſelves to the ſame Remedy, to wit, the* Spaw at Scarbrough, *whoſe Reputation being now*

ſupported by two *ſuch* Pillars, *muſt needs ſtand firm, yea and if my Prognoſticks fail me not, riſe* Higher *yet, even till it be owned as a* great Bleſſing of God *to this Kingdom, and one of the moſt Famous Springs of this Kind in the World.* My Lords, *Here is alſo a Compage of* other Pillars, *though of a ſmaller ſize, yet of ſpecial Support, and ſingular Uſe and Ornament to this Building, ſince here we are to make Roome for general entertainment.*

As for the Philoſophical diſcourſe concerning Waters, eſpecially that about the Original of Springs, *wherein I may ſeem ſometimes to deviate from common received Opinions, I hope the Learned will allow me that Latitude, and let* Reaſon *rule us all. I confeſs I cannot in anything content my ſelf, with* Pythagoras *his Schollers, to ſit down with a bare* Ipſe dixit, *or deem it enough to plead* Preſcription. My Lords, *I Submit all to Your* Lordſhips ſage Judgements and Patronage. *I acknowledge here is nothing worthy* Your Greatnes, *but I hope* Your Goodnes *will excuſe that, and pardon my* Boldnes, *in accepting the ſincere meaning of*

My Lords

Your Lordſhips moſt
humble Servant

Robert Wittie,

Univerſis ac Singulis Medicinæ Doctoribus, nec non cæteris Generoſis tam in Urbe quam in Comitatu Eboracenſi in Re Medica verſantibus.

ὑγιαίνειν ϗ ὑγιάζειν.

TRactatiunculam hanc de aquis Scarburgenſibus, Vobis, Doctiſſimi Colendiſſimique Viri, qui & virium Fontis hujus celeberrimi Teſtes eſtis oculati, inter aquas Spadanas Europæas palmam facilè merentis, proximè dico. In directionibus ad aquarum uſum ad calcem libelli, medicamimum paradigmata omiſi de induſtriâ, non modo propter rationes illic allegatas, ſed quia nollem ut inſtruantur Medicaſtri iſti Scioli, quos unuſquiſque ferè Pagus tenet, qui morborum Ægrorumque naturam & Fontis vires ignorantes, meo forſan telo aliorum animas transfigerent; vel ſaltem propoſitum meum non tenentes, uno eodemque omnes calciarent calopodio. Noſtis etenim quantam nobis Moleſtiam a præpoſterâ

Medicamentorum exhibitione quotidiè adfe-runt, undè eodem telo quo Samson in Sacrâ Historiâ Philistæos, asininâ Scilicet maxillâ, Ægrorum millia miserrimè trucidare solent. Vestram autem Eruditionem sat scio Celeberrimi Viri, ad quos ideo Ægros ablegandos censui, ut tam auspicatâ freti Cynosurâ, recto cursu per has aquas procedant, ac tandem salutis portum feliciter appellant, & optatâ arena potiantur. Quod ad reliquum de Aquis discursum, præcipuè de Fontium *origine Diatribam attinet, sub Judice (Lectore Scilicet) lis est, nec me unicuique placiturum, aut singulis Jove ipso acceptiorem arbitror, de quo Theognis suaviter cecinit.*

Οὐδὲν θαυμαστὸν Πολυπαίδη οὐ δὲ γὰρ ὁ Ζεὺς
Οὐθ' ὕων παντὰς αἰδάνει, οὐδ' ἀνέχων.

Quem satis appositè vertit *Erasmus* in Chiliad.

Non etenim cunctis placeat vel Jupiter ipse,
Seu mittens pluviam, seu cohibens pluviam.

Doctis ut spero me voluisse sat est, etiamsi adhuc in Origine *Nili aut Democritæo puteo*

Veritas

Veritas ipsa lateret. In luce rerum tam tenui homines caligamus, in subterraneis nil mirum si Talpæ summi. Quicquid sit vobis Ornatissimi Viri, in singularis amicitiæ observantiæque. Τεττιγιον *porrigo, quod si unanimi approbetis calculo, & eodem animo acceptum iri quo datum contigerit, manus mentisque precium habeo, neque erit quod Theonini dentis rosionem me tuam, Valete.*

Dat. Eboraci
ex musæo meo *Maij* 29. 1660. R. Wittie.

Encomiasticon in Scriptorem doctum & Scriptum.

WIttodios olim *Germanis* nomine dictos
Ingenio celebres, pristina Scripta docent.
Wittæos nobis tam re, quam nomine habere
Contigerit si *Anglis*, jam sumus ergo pares.
En tibi *Lector* habes specimen quod pagina doctum
Exhibet, & pleni fontis ab ore fluens.
Scriptum fons lymphæ, *Scriptor* fons artis, & altæ
Naturæ *mystes*, ambo perennis aquæ.

Scarburgi haurit aquas, cerebri & ſua dulcia vina
Miſcet, guttato, ſume librum ut calicem.
Non opus huic *hederam* doctæ applicuiſſe *taberna*,
Tu vinum ac hederam, perlege, & invenies.

READER, who doſt peruſe theſe Lines with thirſt,
Start not to meet Aquarius *at the firſt*;
The Title *ſpeaks of* Water, *but in fine*
Though't promiſe water, it will fill thee Wine.

T. C. Mag. Art.

In ſui nominis Viri *Doctoris Wittie* de aquis *Scarburgenſibus* elaboratam tractatiunculam, Carmen

Ἐγκωμιαστικον.

SObrius & ſanus fieres? hac Pagina docta
Edocet, eſt mentis corporis atq; doſis,
Vinum, ſi ſitias; ægrotas? eſt medicamen
Soſpita Scarburgi, *Fons ſalientis aquæ.*
Vilius ut nihil eſt, hâc nil pretioſius undâ,
Hæc purgat ventrem, ſiſtit alitque ſitim.
Nunc Galene *vale, catapotia amara valete,*
Atque magis valeam, Pharmacopœe *vale.*
Scarburgenſis aqua eſt medicina, *ſed* Ingenioſus
Sit Doctor Medicus, *ſit liber* ingenium.

Your

Your papers I have view'd, and think
Your waters are most pleasant drink.
Yet (my good Doctor) tell me why
That waters nourish you deny;
I read your papers, and do find
Your waters nourish corps and mind.
This only fault I fear you made,
That you have spoyld the *Vintners* trade.
Your matters good, yet *I* can tell,
Your art the matter doth excell.
Here Labour, Art, and Learning sweet
Do all within your papers meet.
I think it fit those papers live,
That to so many health may give.
But what needs this? my labour's waste,
Here's *Scarbrough--warning*, I'm in haste.

Your *Scarbrough Spaw* I have drunk on,
But never drank of *Helicon*,
And 'tis no matter, for I think
Your *Scarbrough Spaw* far better drink.

Tuissimus Κηρόφιν ἀπρὶξ,

J. S. Mag. Art. C. Ch. Cantab.

A Rapsodie on the learned Work of my worthy and much hononred Friend, R. W. *Dr. in Physick.*

a ALl ill from th' North? *nay, that's not so,*
For here the wholesome waters flow.
No good by drinking waters? *rare*
b *Language for drunken Poets. Are*
All of this mind? No Pindar *says*
Water's best: *Let him wear the bayes.*
c Demosthenes *drank water, sure*
d *Hence his Orations run so pure,*
Nought precious but what's rare? *How then*
e (*said* Plato *cheif of wisest men*)
Can Water be the *Commonest*
Ofother things, and yet the best?

(a) *Omne malum ab Aquilone* (b) Ὕδωρ δὲ πίνων χρηστὸν οὐδὲν ἂν τεκὴς. *a saying ascribed to* Demetrius *a Greek Poet,* Erasm. Adag. (c) Ἀριστὸν μὲν ὕδωρ. Pind. Olymp. Od. 1. (d) *Lucian. Demost. Encom.* (e) τὸ σπάνιον τίμιον. Opposed by *Plato* in Euthyd.

You see that *Fame's* a lyar, and they must
Run into vulgar Errours, who will trust

Before

Before they triall make; For *Water* may
Be wholesome drink whatever people say.
This learned Author proves it, if you look
On th' *Witty* water-works within his Book.
Read, and you'l call him *Skilfull Doctor*; when
You have tryall made, the *honest Doctor* then.
For here you'l find a way to cure your ills,
Without profound Apothecaries bills.

Let *Epsam*, *Tunbridge*, *Barnet*, *Knaresbrough* be
In what request they will, *Scarbrough* for me.

P. W.

In Opus utilissimum R. *Wittie* Med. Doctoris, de Spadacrene Scarburgensi.

C*Asta* Napæarum *cùm* Phœbus *Aquagia faustis*
(a) *Lustrabat radiis; tùm de temone cadentes*
Stricturas gremio excepit Scarburgia Nympha:
Hàc lege, ut nunquam (nisi de Jovis *arbore malo*
Gustato, imbueret tralucida purpura vultum)
Vivaces vires rutilantis proderet Orbis.
Hinc longis seclis latuit vis enthea Nymphæ:
Dum tandem cœlo delapsa Hygiæa *benigno*
Secretum invenit, in seris quod tradidit Ægris.

(a) *purgabat.* (b) *Quercus Jovi Sacra; et mala quercina sive gallæ Aquis vitriolatis subpurpureum inducunt colorem.*

Ne

Ne Nymphæq; *sacris praclarus* Mysta *deesset*,
Nominis *agnoscens omen*, *radiatus* Apollo
Signavit lymphæ encausto *diploma disertum*,
Quo jus augustum Tibi *transtulit alma* Sacerdos
Phæbi, *tum vires*, *leges*, *mysteria & ortum*
Naiadum *conscribere*, *tum specialiter usus*,
Quos Nymphæ *vestræ* Phœbus *concredidit olim*.
Felices tribuis latices, *Panacea reclusa est*:
Ingeniose, *Tui sit Sostrum fama laboris*.
Exultent Musæ, *ac jam tota* Britannia *plaudet*;
Sero persolvent laudum, *nostriq*; Nepotes
Languiduli, *vestris sua posthuma pensa favillis*.

Nath. Johnston Med. Dr.

Pontefract
June 3. 1660.

In Spadacrenem Scarburgensem.

Prisca salutiferi sileat Germania *Fontis*
Elogium, *& reliquos* Albion *ipsa suos*.
Ὕδωρ νῦν μὲν ἄριστον ἔχεις Scarburge; *salubres*
Optimè Wittæo Fonte *bibuntur aquæ*
Ut Relevent Miserum Fatum solitosque Labores,
Ne ruat imperium Jamque Lyæ *cave*.
Fæcundi calices calamos fecere disertos,
Fæcundos calamo Tuque *facis calices*.

Lectori

Nulla salus cyathis numerose ubi Amica *bibatur*
Quinque Lycas, Lyde *quatuor*, Ida *tribus*.
Funde tamen Cyathos, sivis cute, mente salutem.
Wittai librum volve, revolve, vale.

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Mome

Ἢ πῖθι ἢ ἄπιθι.

Jonath. Aty Mr. Art. Med. Ebor.

The Authors Contemplation upon his Water-Works.

SOme have been wont to entertain
Great *Princes* and their *Royal* Train
With *Water-workes*, and did inherit
Applause according to their merit.
If these of mine were so polite
That I might hope they would delight;
Each Letter should due homage bring
Upon its knees unto the *King*,
And solemnize with jollity *May 29.*
This day and year of Jubilee. 1660.

And

And ſo while each his preſent offers
In Service from his big-ſwoln Coffers;
I'de imitate that honeſt Clown,
That having nothing of his own
But's loyal heart, from the next Spring
Brought water in his hand to th' *King*.
And of this little Book each *Page*
Should *lackey* him unto old Age
With loyalty. And when he dies;
O cruel word! From Engliſh eyes
'Twill floods of briny tears extract,
And raiſe up ſuch a *Cataract*,
To make the waters here below
Unite with thoſe above that flow:
And ſo another ſort begin
Fit Subject for a better Pen.

York May 29. 1660. *R. W.*

Chronogr. | *ACVto MoDVLo* 1660. | *C. F.*

This Chronogram with reference to the aforeſaid Verſes, as alſo the following Epigram were writ by a Perſon of Honour, after the coming forth of the firſt Edition.

In Nomen Angliſſimi Viri Roberti Wittie *Archigenis Eboracenſis, Anagramma, Encomio (cæterum quoad* Knaresburgum *Elegiace) evolutum.*

OCtabis kaLenDas MensIs IVnII.

RO-

ROBERTUS WITTIE. Anagr. TUTOR VITÆ (BREVIS.

Vita brevis *ſed* Tutor *adeſt*, *Medicina parata*;
Scarburgi *lymphæ corrigit*, *aptat*, *ovat*,
Bacche! *Corymbiferis medicata hac Cymbia Gemmis*
Ingenioſus Herus *prætulit*; Alme vales.
Huic benedicta Pari Knarsburgo *redde*, *recurrent*
Munia Nominibus, *Nomina Muneribus*.
Rob-hart & Wittie: *Vernacula Lingua & amatum*
Signat & argutum; *Qua Anglica-Teutonica*.
(a) Ro-bright (Robertus) *Saxonica*, *Mens requieſcens*;
Munera & Archigenis (b) Wittega *Vatis habet*
Luget at Indigenis (*a*) Lar, *grate ubi* Sanctus *Egeno*
(d) Robertus *Vaccam contulit*; *Orba boat*.

E *Præſidio* Kingſtonienſi *ſuper*
Hull, *longè ab* Helicone,
& a Muſæolo,

Chronogr: JVnII CaLenDIs MItto.
Anagr. Nom. E faro fax viſu clares.

(a) Ro-bright, εὐθυμία, *a* Roe (*Sax*) *requies*, *apud nos* Robert, *ſerena tranquillitas*. *Alii vero quaſi* Robe-right, *vid. ſtola purpurea*, *vel coccinea veſtis*; *quâ Doctores in Scholis Academicis honeſtantur*.

(b) Wittega, (*Sax*) *Vates*, *a* Witte *ingenioſus*: *derivatur a* Weiſſ *ſapiens*, *vel acutus*, *unde* Wittan *ſcire*. Lambert.

(c) St. *Robert* was the tutelar Saint of *Knarezburgh*.

proverb. (d) As freely as St. Robert gave his Cow.

C. F. Scarbrough

Scarbrough Spaw.

OR,

A description of the Nature and Vertues of the Spaw *at* Scarbrough, *in* YORKSHIRE.

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SECT. I.

IN the South-East corner of the North-riding of *York-shire*, upon the coast of the *Germane Ocean* is situate the ancient Corporation of *Scarbrough*. It seems to have its name from *Scar*, which signifies a cleft, as learned Mr. *Cambden* thinks, and *Burgh* a Town, as if it were called a Town in the cleft, being environed both at the West, North, and East, with mighty *Britain.*

hills and rocks. It may be ſaid of this place as of moſt of our *Corporations* of *England*, *Caput inter nubila condit*: We know not its Original. The Town is governed by 2 Bayliffs, 2 Coroners, 4 Chamberlanes, and 36 Burgeſſes conſiſting of 3 benches annually choſen, and dignified with a right of electing 2 Repreſentatives in Parliament. It is fortified on the N. Eaſt with an exceeding high and inacceſſible Rock, which ſtretches it ſelfe at good diſtance into the Sea, containing about 18. or 20. Acres of good medow on the top of it: although Mr. *Cambden* out of *William* of *Newburgh* ſpeakes of above 60. Acres; whether the greater part of it be waſhed away with the ſea, or the difference lyes in the various meaſure of Acres, I ſhall not diſpute. The paſſage to the Rock is by a narrow neck of land, on which is a Draw-bridge, over an exceeding deep trench, near which is the Caſtle, which hath been accounted very ſtrong, although it is now become uſeleſs, one half of it having fallen from the other, through a battery of guns in the Siege,

that

that was maintained againſt it by Sir *John Meldram*, againſt Sir *Hugh Cholmley* in the late unhappy wars. The top of this rock towards the Town from the entrance into the gate to the ſea, is further fortifyed and adorned with a very ſtrong ſtone wall; all the other ſides of the Rock are open to the Sea.

There are 2 *Rarities* obſervable on the top of this huge rock; the one is an exceeding deep Well made with hewn ſtone, which is dry at the bottom, through which 'its thought there is a ſecret paſſage into the Town. (I had rather believe it then go to ſee.) The other is a ſpring of freſh water, within half a yard of the edge of the Rock towards the Sea, which in the moſt droughty Summers never wanted water, and was of ſingular uſe to Sir *Hugh Cholmley* and his *Gariſon* in the Siege, as alſo to the preſent *Gariſon*. 2. *Rarities*

Another obſervable in this Town is the mighty Peers of Stone, which are made of round ſtones many of them of ſome tuns weight, which being laid looſe, are yet piled together in ſuch *Peers of ſtone.*

comely order, that ſtretching from the foot of the Caſtle Hill into the ſea, they become a ſure defence againſt the raging waves of the ſea, and make a convenient harbour for ſhips. They have been made of old, and are kept in repair by the *Corporation* of *Starbrough*, which receives yearly a ſumme of money from his *Majeſties Cuſtome houſe* at *Newcaſtle*, out of a ſmall Impoſt paid by every ſhip that fetches coals thence, towards the maintenance of theſe Peers.

The Spaw-well.

But that which adds further to the fame of this place, being the main ſubject of my preſent diſcourſe, is the *Spaw Well*, which is a quick Spring about a quarter of a mile South from the Town, at the foot of an exceeding high cliffe, ariſing upright out of the earth like a boyling pot, near the levell of the Spring-tides, with which it is ſometimes overflown.

It isof that ſort of Springs which *Ariſtotle* calls πηγὰς ἀενάας, which in the moſt droughty years are never dry, but run continually, affording above twenty four

four Gallons of water every hour; the Stone-ciſtern through which it flows being emptied every morning, containing more then twelve gallons, will be full within half an hour.

It was found out about forty years ago by one Mrs. *Farrow* a Gentlewoman of good Repute, who lived in *Scarbrough*; ſhe walking ſometimes this way, and obſerving the ſtones by which this water paſſed, to have received a ruſſet tincture, and finding the water to have an acide taſte, different from ordinary ſpring-water, & diſcerning it to receive a purple tincture from gall, being a diſcreet Gentlewoman, and alſo *Phyſically* addicted, ſhe thought it probable to have ſome *medicinal quality*, and thereupon did both try it her ſelf, and perſwaded others alſo that were ſickly to drink of it, and finding that it did both looſe the belly, and alſo amend the ſtomack, and cure ſome diſtempers, it became the uſual Phyſick of the Inhabitants of *Scarbrough*, and by degrees it came into uſe and reputation among thoſe of the *East-Riding* near adjoyning. After ſome

years the tydings of this *New-Spaw* arrived at *Hull* where I lived, and managed my profession near eighteen years, (where also resided Dr. *James Primrose*, that learned Physician, and my most intimate *Friend* and *Collegue*.) I was usually wont every year, (especially if my business called me that way, and when I heard of any considerable success by the waters) to step to *Scarbrough*, and inform my self throughly concerning the operation and effects of the water, among them that drank of it, and we did frequently send *Patients* thither to drink of it in various cases.

At length it became well known to the *Citicens* of *York*, and the *Gentry* of the County, who do constantly frequent it, yea and to several Persons of Quality in the Nation, who upon the large commendations of such as knew its operation have made tryal of it, with whom it hath gained such credit, that they come above an hundred miles to drink of it, preferring it before all other medicinal waters they had formerly frequented: Nay I have met with several

that

that have been at the *Italian*, *French* and *Germane Spawes*, who prefer this for its ſpeedy paſſage and innocent working both by ſiege and urine, before them all.

Thus having had a large opportunity, for above twenty ſix years, to obſerve the Effects of this *medicinal Spring* both in my ſelfe and very many others, whom I have known to drink of it in various caſes; I ſhall for the benefit of *my Country* faithfully make out my experience, and will therefore treat firſt of its parts, and what Minerals it has imbibed, with the nature of them, and then deſcend to its vertues and effects.

Galen ſayes there are two things that do neceſſarily concur to the finding out of *Arts* and *Sciences*, or the nature of any ſimple Medicine, viz. *Experience* and *Reaſon*; from whence did ariſe two Sects of Phyſicians in his dayes, *Empiricks* and *Methodiſts*: The former obſerved the Operation of Medicines, but never troubled themſelves to pry into the nature of them, or to find out the reaſon of ſuch operation, and were

Lib. 1. de Sim. med fac.

wont to uſe them promiſcuouſly, whom therefore he frequently chides and charges of folly. the other though they had found out the vertue of a Medicine, yet were not ſatisfied with the ὅτι, but proceeded to the διότι, diving into the nature of it, that they might know from whence it had its vertues, and conſequently the reaſon of its working. Theſe he calls the two *Legs* of a Phyſician upon which he would have him walk; and further adds, that he that would hope to attain to any competent perfection in the *Art of Phyſick*, muſt take care to uſe them both.

My deſign ſhall be to follow his advice as well as I may, and ſo to let the *Reader* know that *Experience* hath found out, that this *medicinal Spring* doth work exceeding well both by ſiege and urine, and that it is found to be effectual in all diſeaſes that require ſuch evacuations.

But becauſe I would not have the *Ingenious Reader* to content himſelf with this experimental notion; let him know that this water hath its vertue from its parti-

participation of *Vitriol*, *Iron*, *Alome*, *Nitre*, and *Salt*, the natures of which Minerals I ſhall enquire into anon. *Its Mineralls.*

It is very clear and tranſparent to the ſight, inclining ſomewhat to a ſky colour; it hath a pleaſant acid taſte from the *Vitriol*, and an inky ſmell. *Its Qualities.*

If an equal quantity of it be put to boyling milk, it coagulates it, as do the *Germane Spawes*, and makes a very clear and pleaſant poſſet drink.

A ſmall quantity of Gall being put into it, doth immediately turn it into a dark Claret colour, or like unto Syrupe of violets mixed with water, whereunto ſome drops of ſpirit of *Vitriol* have been put, which if it be ſuffered to ſtand ſome hours after it is ſo turned with the Gall, becomes black and dark, that one cannot ſee to the bottom of the veſſell: but then if you take up the veſſel gently, and ſet it haſtily down again with a knock upon the Table, and ſo break its minute parts, a blackiſh ſediment will fall to the bottom, ſoft to the touch, and the water will become clear and bright again, which may by inclination

be

be ſeparated; ſo as from ſome quarts of *Spaw-water* not above two or three ſpoonfulls will be left at the bottome with the ſediment, which being evaporated leaves a blackiſh powder, a little ſharp to the taſte, which I take to be the *Iron* mineral with a little touch of the *Vitriol*; or if you pleaſe *ferrum vitriolatum*. or *vitriolum ferrugineum*.

I have often uſed this in Medicines in ſtead of *prepared ſteel*, and have found it in all things to anſwer my expectation; yea & I think it far to be preferred before any preparation of *chalybs* we have in our ordinary *Apothecaries* ſhops, being more opening, eſpecially being joyned with *Vitriol*, as here it is.

Every five quarts of this *Spring water* taken clear out of the fountain, contains a body of mineralls, viz. of thoſe five I named before, about an ounce in quantity; (in very dry years I have ſometimes found more,) which may be extracted either by deſtilling off all the water; or otherwiſe by evaporating the water away in a skellet over the fire, the Mineralls remaining at the bottom, which

which cleave to the skellet, as if it were parched meal, not without difficulty to be ſcraped off, being of a compound taſte, ſomewhat bitter, ſalt, ſharp and ſtiptick, and of an aſh colour.

This may be found true by any one that ſhall make tryal thereof ſoon after it is taken out of the Fountain; but being carryed abroad there will be found a loſs of Mineralls, according to the diſtance from the fountain, eſpecially if it be carried in oaken veſſels, in the bottom whereof there will be found a yellowiſh ſediment like unto *Crocus Martis*, and of a *ſtiptick* quality, which is ſuppoſed to be the *Chalybeate* part of the Mineralls, ſeparated by the oaken veſſell, and furthered by agitation in the carryage.

This was firſt obſerved and ſent to me by Sir *John Anderſon* of *Broughton* in *Lincolnſhire* Baronet, a very learned and worthy Gentleman, to whom much is due for his indefatigable pains and ſtudiouſneſs, in ſearching out the parts, and obſerving the vertue and nature of this water, both in himſelf and others.

He

He also observed that at *Broughton*, which is not forty miles from *Scarbrough*, the water would not curdle milk as it doth at *Scarbrough*, and that it doth not receive such a deep tincture from the gall; nor is it found to have such a pleasant acidity as at the fountain; which certainly must proceed from a loss of the *Vitriolive spirits*, of which it doth eminently participate, which being more subtil then the rest of the mineralls are evaporated.

Tis observable when the water in decocting is almost all evaporated and spent, it rises up *in bullas*, making a bubbling noise like the boyling of Alome in the mines at *Whitby*, within twelve miles of *Scarbrough*, on the Seacoast; of which *Sir Thomas Gower* a very ingenious and learned Gentleman, much delighted in chimical experiments, thinks this Spaw doth much partake; and I think it is from the Alome that it is so fixed, and cleaves to the skellet.

I have also sometimes observed in these Minerals, after I had laid them aside

aſide ſome while in a moiſt and cold air, that there have been *Stiriæ*, or little Ice-ſickles among them, which is the form of *Nitre*, as Naturaliſts ſay. And indeed I think *Nitre* to be the moſt predominant of all the Minerals, next to it *Alome*, then *Vitriol*, and *Iron* of which there is above a dram when it is ſeparated from five quarts by the gall, and *Salt* to be the leaſt: Nor can they well be ſeparated further then I have already expreſſed, notwithſtanding many ingenious Gentlemen have indeavoured it.

Beſides what hath been ſaid, there are other grounds to evince a probability that theſe are the minerals which this water has imbibed. Firſt for *Nitre*; The Cliffe at the bottom whereof the *Spring* breaks out, has much *Nitre* in it, which diſcovers it ſelf in veins all along, and eminently within eight yards of the Well, where in hot and dry weather it ſweats out, and is white as if it were ſnow. Secondly, for *Iron*, there are many ſtones of *Rubrick*; beſides much of the earth that falls, being waſhed down

down by the ſea, turns to *Iron-ſtone*, as hard as *Iron* it ſelf, and fuſible being put into a *Smiths* forge, as I have ſometimes found upon trial: There is a piece of the Cliff within an hundred paces of the Spaw, thus converted in a very few years to an *Iron-ſtone*, as much as would load three or four Carts. Thirdly, In the Cliffe and Rocks hereabouts, there is ſome *Alome-ſtone*, ſuch as *Alome* is made of. Fourthly, the deep tincture which this water takes from gall, far more then any other that I have known or read of, denotes it highly to partake of *Vitriol*, which I think unites it ſelf with all the Minerals inſeparably, for as much as which way ſoever you extract them, the acidity is very predominant. And I judge its plentiful imbibition of the eſurine ſpirits and ſalt of *Vitriol*, makes it more largely to corrode the tincture of the other Minerals through which it paſſes. Fifthly, as to *Salt*, I think it borrowes it from the ſea, with which the *Spring* is ſometimes overflown, for I find no *Symbole* of any Mine of *foſſile ſalt* thereabouts. Concerning the nature

ture of all these *Minerals*, I shall forbear to treat at present, being desirous to observe my method I have designed, and therefore I will adjourn it to the twelfth Section.

There may perhaps be some other *Minerals* in this water, but they are not so discoverable; however these being most eminently conspicuous, I shall content my self with them, and leave it to others to try experiments, and make what new discoveries they can.

SECT. II.

Of water in general

NOw since water is the vehicle of the vertues of all the aforesaid minerals, I think it proper for method sake, to speak somewhat concerning *water* in general, together with its several sorts in particular, and the effects thereof, being taken inwardly into the bodies of men.

And here by the way, I intend nothing concerning distilled waters, which are made out of green plants, nor to dispute whether

whether they have in them the vertue of the plants, out of which they are distilled, as *Fernelius* and *Quercitanus* think, or whether they partake nothing of their vertue (especially such as have nothing of the smell or taste of the plants) but are the meer *Phlegma* of them, and of the same vertue with our common water, and to be used indifferently instead of it, as I have often heard Dr. *Primrose* say, it sufficeth that we have them alwayes ready and at hand in our *Apothecaries shops*, to be a vehicle to other medicines which we have occasion to use for present indications, when wholesome common water would many times be far to seek.

De abdit. rer. caus. l. 2. Pharm. restituta.

Nor do I intend to trouble the Reader or my selfe with a Philosophical discourse concerning the *Element of water*, which is one of the four Principles which *Aristotle* saith, do necessarily concurre to the making up of every compound body, and into which it is to be resolved in its dissolution, whether it be animate or inanimate. Neither indeed can that be found any where, not being obvious to the external senses, or capable of alter-

Lib. 2. de gen. c. 8.

ing

ing its qualites of cold and moiſture, without looſing its form.

Inſtead of it we have our common water, whoſe proper place is the ſuperficies or convex part of the earth, and is encompaſſed with the air, being alſo very near of kin to the Elementary water, although not the ſame, as *Galen* & *Paracelſus* do aſſert, it being of the number of thoſe bodies, which *Ariſtotle* calls *imperfect mixed bodies* in his book of *Meteors*. It hath alſo the ſame qualities of cold and moiſture, in which yet it is capable of alteration (eſpecially in the former) from external cauſes, without any formal diminution.

1. *De Element. & de ſimpl. med. fac. l.* 1. *Parac. de Elem. aqua.*

This is called by *Paracelſus* the mother of all generations, and the matrix of all the creatures: Without this, there would be no procreation of animals or vegetables above the earth, or of minerals within the bowels of the earth: This perhaps made *Empedocles* be of the opinion, that all things were made of water.

Param. l. 2 *& de. peſt tract.* 1.

But water is not only neceſſary by way of *principle*, and ſo an ingredient in

the constitution of our bodies, but also in order to nourishment, for the conservation of them in their being and growth; and therefore *Plato* called it of all liquors the most precious, although it may be had at a cheap rate.

In Euthydemo.

I know *Galen*, *Actuarius*, and other learned men, deny any nutritive quality to be in water, although *Athenæus* is of a contrary judgement, because some creatures feed on nothing else, as Grashoppers: and so we see Horseleaches, that are put into water in our Apothecaries shops, will grow bigger. But as for Grashoppers, for ought I know they may feed as other insects do of green plants, and it's probable they do: and as touching the growing of the Horseleaches, I think the water while it is new and uncorrupt, pines them, and makes them hungry, not affording them any nourishment till it putrefyes, which it doth the sooner by their being in it, and so they are nourished as well as bred by putrefaction, which the water hath contracted, and not by simple and pure water it self.

Lib. 2. cap. 2.

Now

Now the reaſon why it adds nothing to the nouriſhment of our bodies, I conceive to be this: That which is to nouriſh the body, is *in proximâ potentiâ* to be blood, and *in remotâ* a member, whereas water becauſe of its ſuper-abundant coldneſs, as alſo becauſe it is a ſimple body, is not capable to become either the one or the other, and therefore it cannot have any nouriſhing Vertue. *Not nouriſhing.*

Notwithſtanding there is nothing more neceſſary unto nouriſhment, it being the beſt vehicle of nouriſhment, without which thoſe groſs meats which we daily eat, could not be aſſimilated, and turned into our ſubſtance: For how ſhould that chyle which the ſtomack makes, by concocting the ſolid meats which we daily feed on, be able to paſs into thoſe ſmall veins in the meſentery, and from thence into the Liver, if it had not a moiſt watery humidity mixed with it for its Vehicle, as ſaith *Galen.* *Yet neceſſary unto nouriſhment.* *Lib. 4. de uſu part. cap. 5.*

If any object that Wine or Beer will ſerve for this end, as well as water: I

Anſwer, Wine and Beer do it by their watery and thin ſubſtance, which they have from their abundant participation of water; beſides water is more generally uſed in the world both by men and beaſts, then either Wine or Beer, and doth better ſerve for other inward common ends. And as for Wine, Beer or Ale, the more they do recede from the nature of Water, the worſe and more unwholeſome are they to be uſed for ordinary drink.

The uſe of water

By the help of water, or what is made out of it, is our natural heat kept in a mean, and our radical moiſture repaired; ſo as the latter is not exhauſted by the exceſs of the former: Alſo with this nature is ſatisfied, and refreſhed as much when we are thirſty, as it is with meat when we are hungry, yet without any addition, or increaſe of the ſubſtance of our bodies, as I ſaid before; but if it be impregnated with ſome vegetable juyce as when it is brewed into Ale or Beer, the ſtate of the queſtion is altered, for then it becomes nouriſhing.

The firſt common drink.

This was the common drink both of men

man and beaſt, during the firſt age of the World, from the creation to the Flood, for above ſixteen hundred years, when mens lives were prolonged to almoſt a thouſand years. Not that I think the drinking of water was the cauſe of their ſo long living, but rather the good pleaſure of God for the more ſpeedy propagating of mankind upon the earth, was the cauſe, and their temperance a great help, a vertue almoſt loſt in this declining age of the world: yet certainly it was the moſt proper drink which man could uſe, in order to the lengthening of his dayes, and preſerving his health, otherwiſe God would have ſhewed him a better.

And if circumſtances be weighed, we ſhall ſee that after the invention and uſe of Wine (which the Scripture attributes to *Noah* after the Flood) the age of man began to be contracted to near a tenth part, and yet ſtill became ſhorter, ſo as in *Moſes* his time, it was accounted but threeſcore and ten. *Pſal.* 90. 10

Nay long after Wine came to be known, I find water was in ordinary

The ancient Romans uſed it

uſe. *Julius Frontinus* ſaith, that the Romans were content with water as their only drink, for the ſpace of four hundred forty years from the building of *Rome*. Yea, even to this day not only the common ſort of Citizens drink nothing elſe, but the wealthier alſo delight in it exceedingly, keeping it in earthen veſſels under the earth, and in their cooleſt Cellers, that they may have it alwayes at hand.

l. 15. Geogr. c. ult.

Strabo ſaith, that the Kings of *Perſia* drank the water of the River *Eulæus* conſtantly, with whom it was in ſo high eſteem, that it was forbidden any of his Subjects to drink of the water of that River. *Herodotus* tells the ſame Story, but calls it *Choaſpes*, which ſaith he, flowes by the City *Suſa*, where the Kings of *Perſia* were wont to keep their Courts in winter. And *Agathocles* in *Athenæus* further deſcribes it, although he names not the River; It ſeems to have been a ſmall one, whoſe water was called by the Perſians *aqua aurea*, or the golden water, which was fed by ſeventy ſpring-heads, of which

Lib. 1.

Lib. 2. c. 2.

So the Perſian Kings.

which it was Treaſon and puniſhed with death, for any man to drink, except the King and his eldeſt Son.

Water was accounted by the Ancients the fitteſt drink for all Ages and Sexes; however in this age of ours it is fallen under contempt. Hence thoſe Laws which *Plato* mentions, that young men ſhould not ſo much as taſte any Wine, till they were eighteen years of age, and women never; which was obſerved by the *Roman* Matrons with very great devotion, as ſaith *Valerius Maximus*, they uſually drinking nothing but warer, or ſometimes a drink called *paſſum*, which is made of Raiſins boyled in water, when they are not well.

Dialog. 2. *de lege.*

Lib. 1.

Athenæus tells of a cuſtome among the *Roman* woman, that they were wont at the firſt meeting with any of their husbands kindred, to ſalute them with a kiſs, who not knowing how ſoon they muſt meet ſome of them, did drink no Wine at all, leſt they ſhould ſmell of it and ſo be diſcovered, and have their names ſet up, that woman being ac-

Lib. 10. *Dypn. c.* 13.

counted to want no fault, that would drink Wine.

Italians. And thus alſo the *Italian* women drink nothing but water; concerning which I find a pretty ſtory mentioned by *Athenæus* out of *Alcimus Siculus* an old *Italian* Writer; He ſaith, that *Hercules* as he was once travelling on the way towards *Croton*, being thirſty, turned into an houſe near the way ſide, deſiring ſome Wine to drink, to quench his thirſt; now it happened that there was a veſſel of Wine in the houſe which the good Wife had broached for her own tooth, her husband not knowing of it. The Maſter of the houſe hearing when *Hercules* called for Wine, bad his Wife go and broach the cask, and give him ſome; the good Wife not being willing her Husband ſhould know that it was already broached, (pretending what a deal of trouble it would be to them both) did churliſhly bid him drink water. Which *Hercules* (ſtanding at the door all the while) hearing, called the husband to him, and commended him for his good Will, and ſhewed him the womans deceit,

Ibid.

ceit, and the Cask which now was turned into a ſtone. This ſtory is well known among the *Italians*, and the ſtone is to be ſeen at this day, ſaith my *Author*, as a warning-peice againſt womens drinking of Wine.

Likewiſe at this day in *France*, it is accounted a foul crime for Virgins to drink any thing but water, only their ancient women will mix a little Wine with it, which is called by ſome, although with too much liberty of ſpeech, *vinum baptizatum*. *French.*

It were well if it were more in uſe in *England*, eſpecially among the younger ſort, as that drink which nature firſt aſſigned, which might be done with very much ſafety, if they did inure themſelves to it by degrees, and not too haſtily; for ſo it might tend to the preventing of many diſeaſes, as alſo that common vice of drunkenneſs, which is now become the ſhame of our Nation.

I know it is objected, that the waters in *England*, in regard of the coldneſs of the Climate, are more crude, and not ſo pure and wholeſome as thoſe in *Spain*, *France*

France, and the hot Countries.

Sol. I confess great care ought to be had concerning the goodness of water, of which by and by. But certainly there is no cause for the Objection, since there is no Country but it affords wholesome water, even the most frozen Country of *Greenland*, as I have heard from our Seamen of *Hull*, who yearly continue there many moneths, and use it without any the least harm.

The waters of England are good.

I know the Objection arises from this, that they think because of the coldness of our Climate, the water is not so well concocted with the heat of the Sun, and so is hard of digestion.

1. But they must know, that the Sun by its heat pierces not far into the bowels of the earth in hot Countries, where they suppose the best water to be; the heat thereof piercing not above ten foot deep into the earth, according to the judgement of the best Philosophers, the Springs arising much deeper, as we shall shew anon.

Sal. exer. 75. 2. Again the Sun and the Planets have an influence into the bowels of the earth, where

where neither their heat nor their light can penetrate, to the concocting of Mineralls, that are above an hundred fathome deep, as I might manifeſt at large, from the judgement of good Authors, and therefore we need not doubt concerning water, which perhaps lyes nearer the ſuperficies, and requires leſs concoction.

3. Moreover water (I mean Spring water which is in moſt ordinary uſe) hath its concoction and preparation according to the temperature of heat and cold that is in the earth. Now if we may believe Philoſophy, which teaches that the earth is warmer in winter in the low caverns of it then in Summer, becauſe of the cold air and froſts that ſhut the pores of it, which is alſo ratifyed by our own experience, that the Springs are warmer in winter froſty weather then in an hot Summer; then it followes *à pari*, that in our cold Climate, the earth muſt be warmer then in thoſe hot Climates, and conſequently the water rather better concocted.

4. Beſides it is a wrong to the *God* of

of nature, whose beams of divine love are equally extended in his common providence, for the preservation of mankind throughout the whole universe, as if we in *England*, or they in other more Northern Countries, had not as good a provision of water, a thing so absolutely and generally necessary, as they in the more Southern Climates have. For my own part I believe, that our waters are as wholesome for our bodies, as theirs are for them in those hot Climates, and much more then theirs would be for us; and I think that fluxes and calentures which happen to Englishmen that travall into those hot Climates, do proceed rather from the unagreeableness of the waters to our bodies, than from any other cause that can be assigned.

5. Again, these medicinal waters with which *England* doth abound more then any Country (such as this at *Scarbrough*) do certainly require more heat and concoction then any ordinary potable waters do, of which since *England* affords so many, and some of them far better then those that are found

in

in other Countries, it is without reaſon to queſtion the concoction of other waters.

6. And *laſtly*, the waters of *England* do agree fully and exactly with that deſcription, and thoſe tokens of good water which I find laid down in the writings, either of Philoſophers or Phyſicians, *Grecian*, *Arabian* or *Latine*. If any man require further ſatisfaction concerning this point, I referre him to Dr. *Primeroſe* his Book of *Popular Errours*. *Lib.*3.*c.*1.

The ſum of what they all ſay amounts to this, that there muſt be a concurrence of the Verdict of three Senſes to prove the water to be good, *viz.* *Sight*, *Taſte* and *Smell*; I will not trouble the Reader nor my ſelf with many quotations. *Tokens of good water*

To the *Sight*, it muſt be exceeding tranſparent and clear, without any ſediment when it hath ſtood long, and which being ſhaken hath no ſhreds of any ſhape whatſoever, or motes, or ſand flying about.

To the *Taſte*, it muſt be void of all qualities

qualities, neither ſweet, nor ſowre, nor ſalt, nor acide, nor muſt it have any other taſte that can be diſcerned by the tougue; the formality thereof conſiſting in cold and moiſture.

To the *Smell*, it muſt have no ſmell at all, nor muſt yield any quality that can be diſcerned by the moſt accurate noſe.

L.5. Med. leg.qu. tit. 4. *Paulus Zachias* a learned Roman Phyſician, will have the other two Senſes to give Verdict alſo; even the ſenſe of *Hearing*, accounting that bad which being poured from one veſſel to another poures like oyle without noiſe, as being thick and unctuous, on which account *Baccius* diſcommends the water of *Tiber*, as alſo becauſe it is thick and oyly to the *Touch*.

Lib.1.de Tib. aq.

To the which I will adde one tryal more, that which being boyled yields no ſcumme on the top, nor ſediment at the bottom, but all evaporates into air: there are other tokens which I ſhall reſerve for their due place.

This ſaith *Montanus*, is the common matter of all thoſe things with which it

is

is mixed: And as the *Aſtrologers* ſay of *Mercury* among the Planets, ſo I may ſay of water, it is good with the good, and bad with the bad, it heats with hot things, and cools with the cold; yet it is to be obſerved, it ever dulls the heat of hot things, and ſuch as do attenuate.

Now cold ſimple water is not only the common drink which the God of Nature hath provided for all his Creatures, for the ſuſtentation of them in their being, but alſo it is moſt healthful being taken inwardly, and is preſcribed by Phyſicians in many caſes, both to prevent and cure diſeaſes, and tends much to preſerve us in our Well-being; Concerning which one *Hermannus vander Heyden*, a Dutch-man of very good worth, hath writ a peculiar Tractate well worth the reading. *Good in many caſes.*

It tempers our natural heat, which otherwiſe would ſcorch and dry up the humours of the body, as ſaith *Fernelius*, and doth exceedingly correct that preternatural heat which is cauſed by Fevers, as *Galen* and *Avicen* do affirm, and *Meth. med. cap. 5.*

and they both allow it to be drunk in a large quantity, especially if there be signs of concoction in the veins, (which a learned Physician is able to judge of) and then it helps the critical evacuations of Nature by sweat, siege or vomit.

Aristotle saith, that they that use to drink water do see the most clearly, which is agreeable to reason, because it sends no hot fumes up into the brain, but rather allayes them.

Eubulus commends it to help the invention, and saith, that such as drink water, are the best inventers of new things, whereas all strong drinks do dull the understanding, as *Athenæus* cites him.

It is good against vomiting, when it proceeds from bilious humours; stayes the Hicket when it arises from choler, that corrodes and vellicates the Tunicles of the stomack; and stayes the flux; and being drunk warm it causes vomiting.

A glass of cold water being drunk after meat, is good for an hot stomack that

that concoets too faſt, and for ſuch as *Hippocrates* calls πικρόχολοι ἄνθρωποι; but it is not ſafe, when a man hath been toyling and is hot, as *Cornelius Celſus* ſaith: nor can I approve of cold water for ſuch as are old, and have a very feeble ſtomack, leſt it overcome their natural heat, and they find the ſame fate that *Ariſtophanes* relates of *Tireſias*, who drinking of the water of *Tilphoſa* a famous Spring in *Bœotia*, when he was very old, dyed immediately, the coldneſs of the water overcoming his feeble natural heat. *Lib. 1. c. 3*

Water furthers procreation of the Species, and therefore it is obſervable in thoſe Countries where they drink altogether water, they multiply more then elſewhere; and hence was the Law which I read of in *Plato*, that thoſe that were new married were to drink nothing but water: They indeed that drink Wine are more ſalacious, yet they are leſs prolifick. *Dialog. 2. de lege.*

Crato in Scoltzius tells of one, that by drinking every night and morning cold water, found very much benefit in freeing *Conf. med.* 143.

freeing him from his usual violent tormenting pain of the Stone, (in the morning he swallowed some grains of Pepper in it unbruised, to correct its coldness) which may very well be, because it tempers the excessive heat of the Kidneyes, and corrects the sharpness of urine.

Hermannus vander Heyden commends it highly against the Gout, as a most soveraign Remedy, in his Book before cited.

It tempers the heat of the Liver, but it hurts the Spleen, being taken in too great a quantity, for it fills it with serous humours; and therefore when we would use it for the hot distemper of the Liver, we should have respect to the Spleen to remove its obstructions, as *Capivaccius* sayes well. And let this suffice concerning Water in general, to beget it a little more credit among us, because of its antiquity and usefulness,

In Scalt. Cons. med. 156.

PATENT OFFICE

SECT. III.

I Come now to ſpeak concerning the ſeveral ſorts of water in particular, as they lye in the order of *Nature*, and are or may be the cauſes of each other: And firſt of *Sea-water*, as that which was firſt in Nature, and very briefly, not being of uſe to be taken inwardly, yet falling into our conſideration in the ſubſequent diſcourſe. *Of Sea-water.*

The Sea makes one Globe with the Earth, being yet not confuſed with it, but divided from it, and gathered together into one place by it ſelf, on the third day of the Creation. This globe has but one common Center of ſolid earth, the Sea-water being contained in the concave parts of the earth's ſuperficies as in a veſſel, there being no water which is not bottomed by the Earth, as Naturaliſts averre. The water being a lighter Element, its proper place is to be above the Earth, ſo as the greater part by far of the Superficies of the globe *Gen.* 1.7.

is covered with water; notwithſtand-
2 *Pet.* 3.5. ing which the higher places of the earth ſtand out of the water, and appear above it, giving bounds to the water which it cannot paſs over, as the Scripture ſaith, and ſo are become ha-
*Pſal.*104.9 bitable for men and beaſts.

Sea-Water is Salt and hot in operation, binds and dryes the body, if it be drunk, as do all ſalt waters, according to the judgement of *Hippocrates*, which he ſayes are ἀτέραμνα καὶ σκληρὰ, indomitable and hard, it rather increaſes then quenches thirſt, & hath been found deadly to ſuch as have drunk of it being exceeding thirſty, as ſaith *Paulus Ægineta*.

L. 2. de re medica. cap. de ſiti 53.

I would not be ſo underſtood, as if I thought all Salt-waters were to be rejected from inward uſe, or as if no ſalt waters would purge the body: The Sulphur Well at *Knaresbrough*, a gallon whereof being vaporated away, yields two ounces of ſalt, is dayly uſed inwardly with very good ſucceſs in many caſes, and purges the body, as I know by experience; and as Dr. *Dean* and Dr. *French*

French do both witneſs in their Books upon that Subject: This Spring doth the ſame, and hath ſome ſalt in it: Notwithſtanding if ſalt waters do looſe the body, it is from other Minerals of which they do participate, and not from the ſalt, on which account they rather dry up the humours, and are ſingular good even in hydropick conſtitutions; eſpecially in the beginning, the truth whereof I have proved by good experience in an Honourable Lady, to whom I commended the uſe of the Sulphur-Well before mentioned in the Dropſy with good ſucceſs.

Hence it is that *Hippocrates* in the place afore cited, blames them for their ignorance, that upon any ſleight occaſion uſe ſalt waters inwardly, expecting to looſe the body with them, they having from the ſalt no ſuch vertue, but rather ſtay the belly, and cauſe the body to break out in ſcabs.

The Sea-water hath indeed ſome ſweet parts in it, which are thinner and lighter then the ſubſtance of the water is, from whence it comes to paſs, that the ſteam of

those fishes that live in the Sea, is as fresh as those that are taken in fresh waters.

Some there are that tell us, that the Sea is fresh at the bottom; although I can scarce believe it, for the salt water being heavyer then fresh should rather be at the bottom; nor I think will they ever be able to prove it by ocular demonstration; *Cardano* sayes that this was sometimes tryed at *Venice*, but it was not found to succeed. It is much controverted among the learned, what may be the cause of the saltness of the Sea, as also of the Tides; concerning both which, there is great variety of opinions, which I have seriously weighed, and I shall in due time take the boldness, (yet with modesty) to cast in my Mite towards the deciding of the Dispute; but it being not so proper to trouble the English Reader with notions of that nature, I shall reserve my conceptions for another Tractate upon this Subject, in a language more universally known to the world.

If one distill Sea water in a cold Still,

it

it yields fresh water. And I have read an Experiment in *Aristotle* which is worthy a tryal, and may be of use to such as go on long voyages, and want sometimes fresh water. He saith, that if a bottle be made of Wax, and the mouth of it be close stopped, so as no water can run into it, and it be cast into the Sea and made to sink, in a few dayes it will be found to have fresh water in it, very pleasant and wholesome to be drunk. I have inserted this for the Sea-mens sake, to whom it may be beneficial. *Lib. 2. meteor. 3.*

SECT. IV.

IN the next place I come to treat of *Rain Water*, with its Original and Qualities; the Product or Original is thus: *Of Rain.*

The Sun and the rest of the heavenly bodies do by their heat draw forth out of the Sea, and other moist bodies that are on the earth the vapours, (which are the more rare and thin part of the water and bodies) these by their heat they do *Its cause.*

ſo rarify, that through their levity they fly upward towards the upper Region of the air, the proper place of ſuch light bodies; where they continue in a wild motion till according to the *ordinary courſe of providence*, by the influence of the Moon, or ſome planetary Aſpect out of ſigns of the *watery triplicity*, or ſome other cold and moiſt *conſtellation*, they become more groſs and moiſt, and ſo by their weight deſcend into the middle Region of the air, where by the exceſs of cold they are condenſed into waters, and now being become an heavy body, do fall down upon the earth in ſhowers, making thereby a kind of *circulation* in Nature, through the aſcent of vapours and deſcent of ſhowers.

This I ſay is according to the *ordinary courſe of providence*, when notwithſtanding without any of thoſe previous influences of the celeſtial bodies, *Almighty God* who is a moſt *free Agent*, and doth what he will in the heavens and the earth, doth ſometimes by a ſpe-
Exod. 9.18 cial providence cauſe it to rain; and at other times alſo he doth ſo ſuſpend the aforeſaid

aforesaid influences, that it rains not at all, as in the case of *Elijahs* prayer. *Jam.* 5. 17 Thus as the Prophet observes, he makes it to rain upon one City, and not upon another; and this he doth that he may keep us in a constant dependance upon himself, as upon the first and primary cause, without whose concurrence secondary causes can produce no effects at all. *Amos* 4. 7.

Now this my judgement concerning the causes of rain, is agreeable to what is writ upon that subject, by the best Philosophers and Physicians, the Scripture also being clear in it, *Amos* 9. 6. He calleth for the waters of the Sea, and poureth them out upon the face of the earth: to which add that in *Job* 36. 27, 28. He maketh small the drops of water, they poure down *rain* according to the *vapour* thereof, which the *clouds* do drop.

And that the rain doth fall, or is withheld from us in *ordinary providence*, according to the influence of the *celestial bodyes*, is deducible from another place in *Job*, *cap.* 38. *v.* 25. and so forward: where

where God expostulating with *Job* concerning his mighty works of providence, reads a Lecture to him concerning the *Meteors*, of Rain, Lightning, Thunder, Dew and Frost, with their causes; and in the 31. verse he hath this question to him; Canst thou bind (or restrain) the influence of the *Pleiades*, or loose the bands of *Orion*? with other expostulatory questions: the meaning thereof is this; Canst thou stay the rain, and hinder it from falling? or canst thou loose the frost and make it thaw? The *Pleiades* being a moist constellation in the shoulder of the sign *Taurus*, which brings wet; and *Orion* a dry constellation in the last decade of *Gemini*, arising in the evenings in the beginning of *Winter*, causing frosts. I might enlarge concerning *Mazaroth*, viz. the twelve signs, and *Arcturus*, which are mentioned in verse 32. but I hasten. Nor is this my own private interpretation, but it is agreeable to the judgement of the most learned Interpreters upon the place, and particularly of those that were *Members* of the late reverend

Assembly

Assembly of Divines, in that their excellent Expolition upon the Book of *Job*.

Now from the consideration of what hath been said concerning the concurrent causes of *Rain*, it will follow, that Rain-water is the most light of all others, clear and of thin parts, and agreeable with the description of the best water before laid down, being also most *ethereal*, and having the fewest terrestrial or earthy parts of all waters whatsoever. *Its nature and quality*

Hence it is that *Hippocrates* preferrs Rain-water before any other, especially that which falls in *Summer* out of White and thin clouds, and with Thunder or Wind, which do help to purify it more; but he discommends that which falls out of thick and black clouds, nevertheless he would have it boyled before it be used, because of all other waters it is most apt to putrefy and become corrupt. *Lib. 6. epid. & de aq.*

Nor let any startle at it, as that therefore it should be the more unwholsome, because it is subject to corrupt so soon; *It soon corrupts.*

soon;

ſoon; this being rather a token of its goodneſs; in that it is ſo eaſily altered, according to the judgement of *Paulus Ægineta*, *Oribaſius* and others, although this may be helped, if it be kept in a cool place, and in a pure ſtone Ciſtern.

Only let me give this caution, that it be not kept long before it be uſed, leſt being corrupted it cauſe hoarſeneſs and difficulty of breathing, and breed Cholerick humours in the ſtomack, and weaken its retentive faculty.

Raſis ſaith, it is ill for thoſe that are ſubject to Fevers when it hath been long kept. And ſo *Ætius* is of the ſame mind, forbidding it alſo to be uſed in Cholerick conſtitutions, and in the jaundice, becauſe it is eaſily turned into choler, but commends it to be uſed in Eye-waters to ſtop a flux of humours, or to conſolidate Ulcers of the eyes, as being more aſtringent then Spring-water; which yet I cannot believe, becauſe it is as I ſaid before of thin and aerial parts, and not ſo terreſtrial as Spring-water is. And for this cauſe I think

think it the beſt of all others to be uſed in aperient or pectoral Apozems, provided it be taken when it is new fallen, and ſtrained through a thick cloth or paper, the body alſo open.

Only to that of *Ætius* I'le add this, that of all other waters that are drunk cold, Rain water is the worſt for *cachectick* conſtitutions, which have an ill habit of body, and for ſuch as are *Scorbutick*, for though it be of thin parts, yet becauſe it is more ſubject to putrefy then other waters, and thoſe bodies not ſo pervious as ſound bodies are, it is to be ſuſpected, leſt it ſhould ſoon corrupt, before it can paſs through the body, and ſo increaſe the maladies.

This by its admirable fecundity refreſhes the Earth, and makes it bring forth fruit, filling its lap with variety of vegetables, neceſſary for the ſuſtentation of man and beaſt, without which it could bring forth nothing at all, and ſo would not be habitable. And what falls more then is neceſſary for the production of vegetables, ſinks further into the Earth for the ſupply of Springs

and

and ſubterraneal generations of minerals and metalls, concerning which we ſhall have occaſion to treat more anon.

DEW. Near of kin to *Rain* is the *Dew*, being produced alſo out of vapours, only thoſe more thin and ſubtile, and when the air is temperate as to heat and cold, and thence it is that it falls moſt in the *Spring* or *Autumne*: It is of great uſe in nature in that it refreſhes the Plants and Flowers, which otherwiſe would be ſcorched up with the Suns heat. If it be gathered it ſoon putrefies, many Inſects being alſo bred out of it; yea Summer fruits being gathered when they are wet with dew, will not keep. If it be drunk it looſes the belly, and the Summer fruits that are eaten while the Dew is on them, do make the body ſoluble.

SECT. V.

LIke unto Rain is *Snow* and *Hail*, eſpecially in their original cauſe, for they both proceed from the like vapours, which are drawn forth (as I ſaid before)

before) by the heavenly bodies, out of the Sea and terrestrial bodies, and elevated into the upper regions of the air, where by a greater and more intense degree of cold then that which produceth rain, they are condensed into snow and hail. The Hail comes from an higher cloud near the middle Region in great drops, which falling through a warmer air, the outside is a little thawed, and so becomes smooth, and of a round figure: The Snow falls from a lower cloud, distilling gently, and freezes as it comes, and so lyes lighter upon the earth.

I find that Snow was much in use among the *Ancients*, who carefully preserved it all the year, to mix it with their Wine, to allay its heat, and give it a pleasant coolness to the Palate. They had also many Huckſters who hoarded it up, and sold it for good profit.

Thus *Chares Mytilinæus* in his history of *Alexander the Great*, tells how that in his Siege against *Petra* a City of *India*, he was exceedingly delighted with Snow mixed in his Wine, and he relates

his

his manner of preſerving it: *viz*, He cauſed many great and deep Trenches to be digged in the earth, which he covered over with Oak-boughs, in which the Snow was laid, being gathered when it was new fallen, and preſerved for the uſe aforeſaid.

No leſs carefull are they at this day in *Spain* and *Italy*, and other the hot Countries of *Europe* in preſerving Snow to mix it with their Wine, to give it a pleaſant coolneſs, laying it up in their loweſt and cooleſt Cellars, which are open towards the North when that wind blowes, and covering it as before ſaid, and ſo they keep it till Winter come again

De ſimpl. cap. 6. And thus the *Arabians* are wont alſo to put Snow into their Juleps for acute Fevers, in which caſe *Raſis* commends it very much. And *Piſanellus* an *Italian* Writer tells that at *Meſſana* a City of *Sicily* where the Climate is very hot, the Inhabitants were every year in Summer troubled with a peſtilential Fever that ſwept away thouſands, till they found out the uſe of *Snow* mixing it with their

De eſcul. & potul. fac. p. 162.

their drink, and then it left them: And hence it is become a cuſtome among them, that every man, even the pooreſt of all, beſides other proviſion which they make for their Families, is ſure to provide *Snow*.

Notwithſtanding which, that Water which comes out of *Snow* or *Hail*, is accounted by all unwholeſome to be drunk alone, becauſe of its exceeding coldneſs, as *Arbuthnot* obſerves, on which account he eſteems it the worſt of all waters, as alſo becauſe of its groſs parts, for that which hath once been congealed into *Snow* or *Ice*, can never return to its priſtine ſtate, for whatever thin, ſweet or ſubtile parts were in it, before it was congealed by the cold, are now loſt and gone, and are turned into a vapour, nothing remaining but the groſs and earthy parts: and this is eaſie to be diſcerned by a veſſel full of water, which if it hath been once turned into *Ice*, and thawed again, ſhall be found to have loſt a good part of its meaſure. Now the thin parts being gone and evaporated away, the groſs body or *caput mor-*

tuum becomes obſtructive, and ſo may produce many diſtempers, beſides the violence it offers to the ſtomack & liver; by its exceſſive coldneſs; and therefore *Averrhoes* forbids it eſpecially to be drunk faſting while the ſtomack is empty, with this expreſſion, *Let no man preſume to drink it faſting*, &c.

Lib. de temper. ſimpl.

But they that mixe it with Wine, do it ſafely and to very good purpoſe, the *Wine* and the *Snow* correcting one another, and ſo making up a wholeſome compoſition.

Another uſe of *Snow*, is, that whiles it lies upon the ſuperficies of the earth, unmelted, it preſerves the earth, and the vegetables that grow thereon from the nipping, piercing cold of the air, which it alſo *purifies*; and when it melteth it moiſtens the ground as doth rain, (although it fattens not ſo much) the ſuperfluity whereof is ſucked up by the earth (except that which runs into lakes and rivers) and is converted to the ſame uſe as rain; to wit, to the ſupply of Springs and ſubterraneal generations, being corrected and better con-

cocted by the moderate heat of the earth, which in *winter* is warmer then in *Summer*.

As *Dew* is to *Rain*, ſo is the *Hoar-froſt* to *Snow*, coming from the like thin vapour, which by the intenſe cold of the air in the lower Region is condenſed, and cleaves to the Vegetables, and other things that are on the earth; The effect of it is, that it kills the Inſects and other vermine, which remain over Summer, and corrode the Plants, and would deſtroy the new ſown corn; being gathered it will ſoon *putrefy*, and is not wholeſome to be taken inwardly. *Hoar-froſt.*

SECT. VI.

THe next in order to be ſpoken to, is *Fenny*, *Pond* or *Lake-waters*, which are made by a ſuperfluity of Rain or melted Snow, ſettling in ſome low places either above, or elſe in ſome Caverns of the earth, which are to be avoided from all inward uſe, as moſt unwholeſome, and many times deadly and poyſonous. *Fenne, pond or lake-water.*

And firſt for *Fens* and *Ponds*, they being made up of melted Snow, are upon that account bad enough, as I hinted before, nor are they amended by the mixture of Rain-water; beſides that in their paſſage they carry along with them ſlime and filth, from which they can never be purged. To this add, that they are ſtanding waters, and lye open both to the heat of the Sun in Summer, which exhales all their thin parts, and leaves them groſs and fetid; and to the cold in Winter, which freezes them, and makes them ſtill more groſs and turbulent.

unwholeſome.

Rufus in *Oribaſius* indeed tells us that the Fenns in *Ægypt*, above all other Fens he ever met withal, are wholeſome, being bred by the overflowing of *Nilus*, which is not ſo apt to corrupt and putrefie as other waters are, and will keep ſweet the longeſt.

Col. Med. lib. 5. c. 3.

They that are forced to drink of *Pond-water*, are much to be pitied, as I know ſome *Towns* that have no other; and thoſe *Alewives* that brew their Ale with it,

it, when they may have better water, (as I have heard for certain ſome do, becauſe it makes ſtronger drink then good water) are much to be blamed; theſe ſorts of water being condemned by *Phyſicians* both ancient and modern, as poyſonous and peſtilential, having in them Horſe-leeches, and other filthy vermine; and therefore of all ſorts of waters, theſe are moſt to be avoided in times of common contagion, as Plagues and peſtilential Fevers.

Hip. de aq. Valler. l. 2. com. loc. cap. 2.

Theſe being drunk do cauſe obſtructions in the liver, hardneſs of the Spleen, corrupt the blood, and ſpoil the complexion: they breed Dropſies, Dyſenteries, the Stone of the kidneys, ſhortneſs of breath, and rotten and peſtilential Fevers, as *Hippocrates*, *Aetius*, *Raſis* and others.

De aquis Titr. 1. Serm. 3. De ſomp. c. 4.

Beſides, They corrupt and infect the Air, with the noyſome vapours which they ſend forth daily, to the breeding of very many diſeaſes: and therefore it is obſervable, that moſt Towns that are ſituate near unto *Fens* or *Lakes*, are more ſubject to malignant diſeaſes, which

Corrupt the air

when Physicians are called to manage, they find very rebellious, scarce admitting of a cure, as *Valleriola* had experience of, at the City *Arles* in *France*. Notwithstanding if necessity enforce to the use of this sort of water; it may be made much more wholesome, if it be boyled before it be used.

Lib. 2. loc. com. c. 2.

Lakes under ground poysonous.

2. As for *Lakes* that are within the ground in the low caverns of the earth, they are also unwholesome, and sometimes deadly, because they are standing waters, close, not open to the Air, and so have no eventilation, tainted by the filthy damps and fogs that are in the earth, and are often found to have in them poysonous vermine. I read of some that had fish in them which poysoned those that did eat of them. In *Caria* near about the City *Lorus* there arose out of the earth suddenly by reason of an Earthquake, a great flood of water, bringing up with it a great number of fishes and other vermine which had been fatted under the earth, of which whosoever chanced to eat, dyed presently.

Sen. Nat. qu. l. 3. c. 19.

I

I am forced to mention these sorts of waters by the way, yet briefly, having some occasion to referre to them in the following discourse.

SECT. VII

Of Spring-water.

I Now proceed to treat concerning *Spring-water*, as that which comes closer to the main subject of my discourse, to wit, The *Spaw* at *Scarbrough*, which is a constant flowing *Spring* or *Fountain*: For the better understanding whereof in its vertue and operation, its needful that I say something of *Springs* in general, together with the causes, nature and variety of them, and that as briefly as the nature of the Subject will bear, because I would not weary my self, or the Reader, with a long and tedious discourse.

3. Original of Springs.

It is a great controversie between the *Stoicks* and *Peripateticks* concerning the Original of *Springs*, also among several modern learned *Authors*; and they pitch especially upon three Original

causes, viz. The *Percolation* of the Sea, the *Transmutation* of Air within the bowels of the Earth, and the *Rain* and *Snow*.

Seas percolation. De facr. Philoſ. Nat. Bath. c. 3. York-ſhire Spaw.

The firſt is the moſt ancient, being the opinion of *Thales*, and *Plato*, and his followers; as alſo of *Valeſius*, and our learned Countrymen Mr. *Lydiat*, Mr. *Carpenter*, Doctor *Jordan*, and Doctor *French*.

The reaſons of their opinion are principally theſe; becauſe, *Firſt*, There is nothing but the vaſt *Ocean* that can afford ſuch abundance of waters, as do ſpring from the Earth, the *Sea* being a ſufficient Store-houſe for all ends and uſes. *Secondly*, Becauſe the *Sea* is not encreaſed by the multitude of waters, which flow into it daily, as it muſt of neceſſity be, if they had not by the ſubterraneal channels a recourſe to their Fountains. And to this opinion *Solomon* ſeems to give ground, 1 *Eccleſ.* 7. where he ſaith, *All Rivers run into the Sea, and yet the Sea is not full; unto the place from whence the Rivers come, thither they return again.*

But

But as for the place of *Scripture*, it proves not the point in hand; the queſtion being not about Rivers but Springs; *Solomon* ſpeaks of the Ebbing and flowing of the *Sea* in great Rivers, into which the Tide runs, they being near the Sea, and they would interpret it of *Springs* and *Fountains*, that are perhaps many hundred miles off.

Not that I deny the *Sea* to contribute towards the making of *Springs*; the *Sea* ſends up vapours in abundance, which being converted into Rain and Snow in their *Seaſons*, fall down upon the earth, and afford matter for *Springs*; but I cannot believe that there is any ſuch *Percolation* as they ſpeak of, whereby the water of the *Sea* is conveyed by occult cavities through the earth to the *Springs*, which are many hundred miles in ſome places of the world diſtant from it, and many of them placed upon exceeding high Land, and Mountains far above the Sea.

I know ſome of them for the making out of their opinion, will have the Sea to be higher then the higheſt mountains, depreſſed

Sea not higher then the earth.

depreſſed only upon the ſhore, as ſaith *Ariſtotle*, becauſe terminated by the dry Land. This Doctrine of the Sea's elevation above the Land being alſo defended by *Tully* (*de nat. deorum*) where he ſaith, that the Sea being placed above the Earth; yet coveting the place of the Earth, is congregated and collected, ſo as it cannot dilate it ſelf, or flow abroad beyond its bounds; as alſo by many learned *Divines* both ancient and modern, who reducing moſt things to the ſupernatural and firſt cauſe, do many times neglect and overlook ſecond cauſes. And they ſeem to be warranted by ſome Scriptures, *Pſal.* 33. verſe 7. *He gathereth the waters thereof together as an heap.* As alſo that place in *Job*, where God himſelf profeſſeth, that he hath bounded the waters of the Sea, in theſe words, *Job* 38. 11. *Hitherto ſhalt thou go and no further, and here ſhall thy proud waves be ſtayed.* And having thus reſolved, they fancy a natural motion of the water from the top of the Sea to the tops of the hills, although they are not all of this mind,

Lib. 2, de Meteor.

Scripture urged.

as

as we ſhall examine by and by.

But we muſt know, the Earth and the Sea (according to *Ariſtotle*, and a concurrence of *Freigius* and all *Geographers*) make up but one body of a *global* figure, the Sea being a moiſt fluid body, keeps the figure exactly, its ſuperficies being alwayes equidiſtant to the Center of the Earth, ſo as in what part of the Sea ſoever a man can ſuppoſe himſelf to be, he muſt needs be in the higheſt part of the *Globe*, whether he be in the middle of the Sea, or near the ſhore, and out of this figure it cannot go without force. Whereas the earth is not ſo exact in the figure, that part of it which appears above the Water of the Sea being extuberant, every Mountain and valley ſtill further breaking the figure; Now if the water of the Sea ſhould ſo paſs from the Sea to the tops of the Springs, as they affirm, it would ariſe beyond its level, to wit, the natural *Spherical* figure, which is abſurd to be ſuppoſed without an *Extraneous forte*.

de cœlo l. 2 cap. 4. de Geogr. p. 489.

Againſt this indeed I have met with an Objection from ſome *Ingenious Naturaliſts* *Object.*

raliſts, which they illuſtrate by a double argument of demonſtration.

Firſt, Take a glaſs-pipe drawn with a lamp to the bore of a ſmall ſtraw or bent, (the ſmaller the better) and of what length you pleaſe, which imagine perforated quite through; immerge one end of it in a veſſel of water, and you ſhall ſee the water preſently aſcend of its own accord, higher then the ſurface of the ſtagnant water in the veſſel, perhaps two or three Straw-breadths.

Secondly, The other is to be ſeen in a Filtre or Spunge, or a piece of bread, or any other body that is porous and free from greaſineſs; in both which (they ſay) the water aſcends beyond its level, without any other *Extraneous force* but what is natural, *viz.* the depreſſion of the *Atmoſphere* of the air upon the ſurface of the water in both caſes, which forces it higher then its level, both in the pipe and in the Spunge, *&c.* And hence they infer, that if that be allowed that I ſay in the beginning of the ninth Section, *viz. That the ſuperficies*

of

of the earth is full of ſecret paſſages and crannyes, like the ſmall fibres of veins in our bodies, by which the Rain and Snow-water ſinks into the earth, &c. and allowing alſo the Sea a communication with them; it will not be hard to conceive that the whole weight of the *Atmoſphere* of the air lying upon the ſurface of the Sea, muſt needs force part of its water into thoſe ſubterraneous crannyes and paſſages, wherein the air can have little or no power of preſſure, and ſo the water (ſay they) muſt needs mount up to the tops of the higheſt hills, to make Springs.

To the *Firſt* experiment I anſwer, *viz.* That it is not *ex natura rei*, from the intrinſecal nature of the water it ſelf ſo to aſcend, which being an heavy body, muſt of neceſſity tend downward, but as it is ingenuouſly confeſſed from the depreſſion of the *Atmoſphere* of the air upon the ſurface of the water in the veſſel: which ſince it comes *ab extra*, may therefore properly be called an *extraneous force*, and ſo does not contradict my Aſſertion. *Solut.*

Secondly;

Secondly, As to the other of the Spunge, &c. where the water aſcends beyond its level, which is ſaid to proceed from the ſame cauſe; Beſides what I have ſaid, that if ſo, it is an *extraneous force*: I confeſs I cannot be induced to think that to be the cauſe of its riſe, for ſuppoſe a ſpoonful of water, and a large Spunge laid upon it, which ſhall defend it from all depreſſion of the *Atmoſphere*, it will yet take up the water into it ſelf, eſpecially if it be wet and wrung out again: and this may proceed either from a *Suction* in the Spunge which *draws* up the water, or elſe (becauſe ſome *Ingenious Gentlemen* deny *Suction*) from the *gravity* of the Spunge, which conſiſting of terreſtrial matter preſſes down into the water, and ſo *drives* it up, which is readily admitted in reſpect of the *congruity* there is between the wet Spunge and the water. And either of theſe I may call an *Extraneous force*, not an improper expreſſion either for *drawing* or *driving*.

Thirdly, Whereas it is ſaid, that if there be an *allowance* of a communication be-

between the Sea, and the ſecret paſſages that are upon the ſuperficies of the earth, then the *Atmoſphere* depreſſing the water of the Sea, may drive it up into thoſe Channels, and ſo make Springs. This is that τὸ ἐν ἀρχῇ, even the ſtate of the queſtion, which muſt be proved before it be granted.

Fourthly, But admit it were granted, that there is ſuch a communication (which indeed I contend againſt) and ſemblance between the water of the Sea and thoſe channels, as is between the water in the *veſſel* and his *glaſſe-pipe*, as alſo that of the *ſponge*; I think it would not yet follow, that the water of the Sea ſo conveyed would create the ſprings: for though in the pipe the water riſes up to *three Straw-breadths*, yet if a hole were bored under it at the *ſecond ſtraw*, to give a paſſage as in ſprings, no water would run out. Nor yet in the other do we ſee any overflowing out of the *filtre or ſponge*, but though they be fuliy impregnated with water even to the top, yet there it is ſtagnant, and runs not forth at all as it doth in Springs, and hence its proba-

ble

ble there is no agreement in their cauſes, which if there were, would produce the like effect; Nor that there is any *force* upon the Sea to ſend its water by any ſubterraneal paſſages to the Springs, or the leaſt communication between them.

But to return to my Subject, to wit, the *Spherical figure* of the Sea; It is moſt certain, that Ships at Sea will at ſome leagues diſtance looſe the ſight of one another, ſo as they that are upon the deck in the one, can make no diſcovery of the other, but if they go up to the ſhrowds they may diſcern one another, and ſtill the higher they climb the better diſcovery they make. The reaſon of this is the *Spherical* figure of the *Sea*, which terminates their ſight while they are upon the deck, untill overtopping the bank by climbing higher they have a clear view. And our *Seamen* obſerve no difference (ſuppoſing the ſame diſtance) from what quarter ſoever the Ships lie from one another, whither towards the Land or off at Sea. For example.

Suppoſe

Suppoſe on the Eaſtern coaſt of *England*, which ſtretches North and South, three Ships ſigned *A. B. C.* of equal ſize. *A.* lies under the ſhore; *B.* lies off at Sea full Eaſt from *A.* towards the coaſt of *Holland*: *C.* rides Southerly from *B.* towards the *Downs*; and *A.* and *C.* at equal diſtance from *B.* Our beſt Navigators tell me, that if *B.* loſe the ſight of *C.* that ſhe cannot be diſcerned without climbing into the ſhrowds; *A.* ſhall in like manner loſe the ſight of *B.* which ſhould not be ſo, if according as *Ariſtotle* and Dr. *Jordan* tells us; the Sea were depreſſed at the ſhore, and elevated at diſtance, but rather *B.* ſhould appear clearly unto *A.* as if it were placed on a high bank at full view. They ſay indeed that *B.* ſhall ſooner loſe the ſight of *A.* becauſe of the dark ſhore under which *A.* lies. *Eib. 1. Met. Nat. Baths. p.* 18.

Now if it be thus, (as *peritis in arte ſuâ credendum eſt*) then is that conceit of the *Seas elevation* above the higheſt Land but a fancy. And that alſo of Dr. *Jordans* will hold no water, when *Nat. Baths. 3. p.* 18.

he saith as in *Siphunculis*, the water being put in at one end will rise up in the other Pipe, as high as the level of the water, so he will have it to be in the bowels of the earth, between the superficies of the *Sea* and the heads of the *Springs*.

Sr. Thomas Herbert.

Besides if the Sea were so elevated above the land, as they seem to defend, I do not see how there could be *Islands*, at any considerable distance from the *main continent*, when yet we know in all Seas there are *Islands*; which yet we may suppose do bear a proportion with the *Continent*, even the *Atlantick ocean*, which as it is the largest, so is thought to be the highest of all Seas, doth not want its *Islands*, as the *Canaries*, some of which are doubtless the highest land in the world, and these *above sixty leagues from the main Continent*, and the *Azores*, which are yet further off: So the *Island* of St. *Helen*, which as our most *authentick Travellers* say, is exceeding high land, and yet lyes almost in the mid way between the coasts of *Africa* and *America*.

Nor is their reaſon for the depreſſion of the *Sea* near the ſhore of any validity; to wit, becauſe it is terminated by the dry land; the argument of demonſtration which they uſe to illuſtrate the thing, being of ſufficient validity for confutation of the poſition. For ſaith Dr. *Jordan*, if a drop of water be put upon a dry Table, you ſhall ſee it depreſſed on the ſides, and elevated in the middle like an half globe, but take away the termination by moiſtening the Table, and the drop ſinks; and he further adds, if this be evident in ſo ſmall a proportion, we may imagine it to be much more in the vaſt *Ocean*. *Cap. 3. p. 19*

What! is not the ſand of the *Sea* moiſtened by every wave as much as the Table which makes the drop fall, and run out of its *Global* figure? why doth not then the Sea as well dilate it ſelf, as the drop upon the Table, and conſequently leaving its *Spherical* Figure drown the world? We ſee the dry Land does not ſo terminate the *Sea*, but it riſes according to the Tides, ſtill more and more, till the Spring be at

the height, and notwithſtanding the moiſtening of the Shore, it returns again to its loweſt Ebb.

Nor do the *Scriptures* before cited make out any thing for their purpoſe. As for that in *Pſal.* 33; 7. *He gathereth the waters together as an heap.* The Prophet is ſpeaking of the admirable power and wiſedome of GOD in the Creation of the world, as is evident in *ver. 6. By the word of the Lord were the heavens made, and all the hoſts of them by the breath of his mouth*: And then follows, *v. 7. He gathereth, &c.* The beſt way therefore to interpret this, is to have recourſe to the ſtory of the Creation, and to ſee there what *God* did with the waters, *Gen.* 1. 7. and 9. After GOD had divided the waters that were under the Firmament from thoſe that were above; He ſaid, *ver. 9. Let the waters under the heavens be gathered together into one place, and let the dry land appear*; So that it follows, the gathering of the waters together as an *heap*, is no more then the putting them into *one place*, and the words that follow

Pſal. 33.7. *cleared.*

follow in that 7th. *verſe* of the *Pſalm*, hint as much, which ſeem to be exegetical and interpretative to the former, to wit, *He layeth up the deep in ſtore-houſes.* Unleſs they will have the Prophet to hint alſo at the *Spherical* Figure of the Sea, to which I can eaſily aſſent.

Beſides, the words themſelves are worthy our conſidering, he doth not ſay, *On an heap*, but *as an heap*, *CONES CANNED MI HAJAM congregans ſicut acervum aquas maris*; Whereas in the ſtory of the *Iſraelites* paſſing over *Jordan*, when the waters were divided before them, and ſtood up in an *heap*, the ſame word in *Hebrew* for a *heap* is uſed, to wit, *NED* not *CANNED Joſh.* 3. 16. *KAMU NED ECHAR. ſteterunt acervo uno.* The *Septuagint* Tranſlating that in the *Pſalm* according to this ſenſe συνάγων ὡσεὶ ἀσκὸν ὕδατα θαλάσσης: *gathering as in a veſſel the water of the Sea.*

As touching that place in *Job* I con- *Job* 38. 11.
ceive it makes nothing for their opinion *covered.*

of the *Seas elevation* above the earth. I deny not *Gods* miraculous and extraordinary working in ſome things to manifeſt the glory of his wiſdome and power, yet I ſuppoſe the Sea to be confined by his providence within the ordinary bounds of nature: for it were very ſtrange to imagine that *God* in the firſt inſtitution of nature, ſhould impoſe a perpetual violence upon nature ſeeing we ſee the Creator in other things to uſe nature as his ordinary ſervant, and to adminiſter the regiments of matters by ſecond cauſes. I conceive no more is meant in that Scripture, but that *Almighty God* hath ſet certain limits and bounds which the waters ſhould not paſs: theſe bounds and limits I take not to be ſupernatural, as if the water reſtrain'd by a miraculous word of command, ſhould be forced to contain it ſelfe within its circuit preſcribed to it; but natural as cliffs and hills, within which the water ſeems to be intrenched; for we may ſee there is no ſuch force put upon it; but if the naturall bounds of the *Sea*,

to

to wit, the cliffs be removed, the Sea overruns the Land, and turns all into it ſelf.

But the *Authors* of this opinion urge further, that according to the order of the Elements among themſelves, the earth ſhould be loweſt, and the water above it. *Object.*

I Anſwer, if we conſider theſe Elements among themſelves, we muſt give the height to the water, for as much as the greateſt part by far of the Earth lyes drowned, for that which is above, bears no ſenſible proportion with that which lyes under the water. But here we are not comparing the two Elements intirely betwixt themſelves, but the ſuperficies of the water with the parts of the earth that are uncoveted, and are habitable, which ſuperficies of the Earth notwithſtanding this reaſon, may be higher then the water. *Sol.*

But they object further, becauſe *Mariners* comming from the main *Ocean* to the Land, ſeem to ſee the Land far lower then the water. *Object.*

This may eaſily be made out of Op- *Sol.*

tical principles, that it muſt appear ſo, by reaſon that the *Spherical* figure and convexity of the Sea interpoſed betwixt our ſight and the lower part of the Land, doth hide ſome parts from our ſight, whence it muſt needs appear lower, being couched almoſt under water; The like is diſcernable in another Ship at Sea, which ſeems to be depreſſed under water at ſome Leagues diſtance, ſo as nothing appears but her top Sails. Beſides at diſtance all things ſeem lower even upon a level at Land, which when we draw nigh unto, do better diſcover their height.

I read that in *Noahs* Flood, *God* brake open the Springs of the deep, and opened the Cataracts of heaven, to pour down rain continually many dayes together upon the Earth, of which there had been no neceſſity at all, had the *Sea* been heaped up in ſuch ſort as they imagine; for the only withdrawing of his hand, and letting looſe the reins that the water might have run to an evenneſs, would have been ſufficient to have overwhelmed the whole earth.

Again

Again, We find by experience, and our *Mariners* do all agree in it, that a like gale of Wind will serve to carry a Ship out of the Port to the open *Sea*, as from the Sea into the Port, which could not be, if the Sea were higher then the Land, for they would need a great and ſtiff gale to carry them up the bank of the Sea, and none at all to run into the Land.

And thus I conceive we are free'd from that abſurd conſequence, which their Doctrine of the *Seas Elevation* at diſtance, and depreſſion on the ſhore, doth neceſſarily infer; to wit, that the water which runs out of Rivers in the ebbe, aſſoon as it reaches to the Sea, muſt run up the hill in its own natural motion, which is againſt the nature of heavy bodies, whoſe motion is ever downward to the Center of the Earth, as alſo *Ariſtotle's* own Doctrine elſewhere. *Lib. 2. de cœlo c. 4.*

Beſides, as Dr. *French* well obſerves, a man would think ſo many great Rivers terminated in the Sea, might be a ſufficient moiſture for the taking away

of

of the termination made by the dryneſs of the Earth, and to make the globous Sea ſink to an evenneſs.

Moreover the manner of conveyance of the *Sea-water* to the heads of *Springs* fancied by Dr. *Jordan*, through the ſecret channels of the Earth, requires a man of much credulity to believe him; to wit, that the water in thoſe his ſubterraneal crannies ſhould without any force upon it, leave its natural figure, and correſpond with its level; and yet the ſame water being expoſed to the open air near the ſhore, ſhould both make and abide in a valley. It further implyes much eaſineſs of perſwaſion in him that can believe, that thoſe Springs which are two or three hundred miles from the *Sea*, as ſome are in great Continents, muſt yet be ſupplyed with water from the *Sea*, by Channels of that length.

Beſides, If there were ſuch Channels from the *Sea* to the *Springs*, as he fancies, that are hollow like pipes, the water of the *Springs* would certainly be brackiſh, according to the nature of

the

the *Sea-water*, which in ſuch length of time would have tainted the Channels through which it paſſes; as the Lord *Bacon* obſerves, that although pits digged near the *Sea*, will be found in time to have freſh water in them, yet afterwards they will become ſalt, the ſand through which the water is tranſcolated contracting ſaltneſs, ſo as new ones muſt be made; and ſo I think of Dr. *Jordan*'s ſubterraneal Channels. *Nat. Hiſt. cent. 9. exp. 882.*

As for *Divines* who are of opinion of the Seas height above the Land, I deſire them to conſider of that place in *Pſal.* 107. *ver.* 23. where it is called, *Going down to the Sea in Ships*, the words being *JORDI HAJAM*, *Deſcendentes ad mare*, coming from the ſame root *JARAD deſcendit*, with that word which is uſed in *Micha* 1. 4. *MORAD*, which ſignifies *locus declivis*, or a ſteep place. The like expreſſion is uſed in *Pſal.* 104. 8. where the paſſage of the waters through the valleys into the Sea, is called, *A going down*. Yet I deny not, but there may be ſome Springs which at ſome ſmall diſtance have a ſup- *Pſal.* 107. 23.

ply

ply of water from the *Sea*, but this makes nothing for their opinion concerning the ſupply of Springs at great diſtance, and upon the high mountains. *Pliny* tells us of a Spring in the *Gades* which obſerves the Seas motion, in ebbing and flowing: and I am credibly informed there is another in the *Peak in Derby-ſhire*, which ebbs and flows every twelve houres. So the Spring at *Giggleſwick in York-ſhire* ebbs and flows many times a day, even to admiration: whether that of *Plinies* may have any correſpondence with the Sea or no, I know not: I am ſure the other two have not: and I had rather with *Seneca*, look on ſuch as theſe as wonders of *God*, then trouble my ſelf curiouſly to inquire into their cauſes, that are too hard for me.

Lib. 2. c. 56

Lib. 3. Nat. Queſt.

But theſe that are of opinion of the *Seas percolation* to be the cauſe of *Springs* are not all for this way of conveyance, they ſay the water of the Sea is conveyed by tranſcolation into huge Caverns in the body of the Earth indeed, but then they differ again in finding its

Several conceits.

its paſſage to the *Spring-heads*, each propounding a way according to their fancy: Of agitation by ſubterraneal winds, as *Socrates in Plato*. Compulſion by a Spirit or breath that is in the water, as *Pliny* & *Valeſius*: of compreſſion, and that either through the weight of the Sea it ſelf, a great part whereof he ſuppoſes to be out of its place in the air, as *Seneca*. Or of the earth, as *Bodinus* and *Thales* Or rarefaction and condenſation, as Dr. *Fludd* and Mr. *Carpenter*. Or attraction by the heat of the Sun and the heavenly bodies, as *Thomas Aquinas* held. Or *Helmonts Sabulum*, or Virgins earth; all which as they ſeem at the very naming to be nothing more then empty conceits, beſides the diſagreement that is among themſelves, renders it the more queſtionable, ſo they are ſufficiently confuted, ſome of them by Mr. *Carpenter* in his *Geography*, and the reſt by Dr. *French* in his diſcourſe upon the *Spaw of Knaresbrough*.

In Phœd.

Plin. l. 2. c. 64.

Deſac. phil c. 1. & 63

Nat. Qu. lib. 3.

Lib. 2. Meatr. Nat. Geograph.

Aq. in Sum. p. 1. q. 69.

There is another account given by *Empedocles* an ancient Greek Philoſopher

pher; as also *Seneca* for the ebullition of *springs*, to which *Gabriel Fallopius* Mr. *Carpenter*, Mr. *Lydiat*, and Dr. *French* adhere, the last taking a great deal of pains to make it out, and that is by *heat*, whereby he will have the water which is conveyed from the *Sea* into the Caverns of the Earth, to be elevated to the heads of Springs, after the same manner as from the Sea to the middle region of the air, and that is by resolving the water into vapors, nor matters he whether that *heat* be above or beneath the waters, if so be it turneth them into vapours, and maketh them ascend as high as is requisit they should: And this heat he will have maintained by subterraneal fires, that are kindled and fed by *Naphtha* or some bituminous matter. And he makes two degrees of *heat*, one more intense in the deep Caverns, to rarifie the waters in the Caverns into vapours, the other more remiss nearer the superficies, which must condense them again into waters; which he illustrates by the head of an Alembyck, and the cover of a boyling pot

Lib. 1. de aq. med. c. 3. Spaw p. 21, 22. &c.

Dr. French his opinion.

pot, whoſe more remiſs degree of heat turns the vapours into water.

Is not this a fine argument of demonſtration, making out *Nature* to be a great *Chimiſt* with its *furnace*, and enough to prove the *new way* of preparing all medicaments by our *Modern Chimiſts* to be of all other moſt *natural*, when water the moſt common, and yet moſt neceſſary thing in the world, cannot be thought to be rightly prepared, without being tormented in the fire, and made to paſs through a furnace?

Although *Ariſtotle* who alſo will have water to be generated in the earth, ſayes it is condenſed by cold, and the Philoſopher ſeems as much to be believed, eſpecially ſince its more agreeable to their own paralell of the middle Region, where certainly the vapours are condenſed by cold. *L.* 1. *Meteor c.* 11.

But the very myſteriouſneſs of this converſion through the whole deſign, renders it much to be ſuſpected not to be agreeable to verity, or to be *Natures* way, which is evermore found to be a plain and ſimple way.

That

Sol. That there are bituminous fires, our own reason (besides the testimony of good *Authors*) doth sufficiently evince, from whence are those burning mountains, *Aetna* and *Vesuvius*, with several others of like sort that we read of: those subterraneal fires (as some learned men think) being also the efficient cause of hot Springs, such as those mentioned by *Plato* and *Pliny*, the one in *Sicily*, the other at *Samsata*, and our own at the City *Bath* in *Somersetshire*, besides many others which we meet withal in the writings of our Historiographers.

Although our *hot Bath* in *Somersetshire* seems to come from another cause, viz. *From a mine of natural calx or lime* which is in the earth, which heats the Spring as it runs through it, which being close pent up, and not subject to eventilation from the open air, may help to perpetuate its heat: And this is made out of an excellent observation of the Right Honourable The Lord *Thmas Fairfax*, who being at the City *Bath* with his Lady, and riding one day out through the gate towards *London* road,

and turning up a *Lane* on the left hand, leading to a *Moor* Northwards, about the middle of the *Lane*, or a little higher on the right hand of the Lane, and about half a mile from the City, his Lordſhip ſpyed three or four ſmall heaps, ſome of them of pure white matter like refined Sugar, or fine tempſed meal, the reſt were of a darker colour enclining to yellow with a mixture of earth: Theſe his *Lordſhip* cauſed his men to take up, wondering what it ſhould be; a ſmall quantity whereof being put into a glaſs of cold water, made it warm. About five or ſix years after, his *Lordſhip* telling me of this his experiment, gave me a little of the powder which yet he had by him; ſome of which I put into a ſmall flute glaſs with a little water, and immediately it took heat, even after ſo many years keeping. His Lordſhip obſerved it after a violent ſtorm of weather, that had continued there for ten days before, which he thinks poſſibly might occaſion ſome fermentation in the earth, and conſequently a tranſudation of that mat-

ter. It is ſomewhat hot and biting upon the tongue, like lime, and it ſeems very probable that thoſe hot Springs may have their heat from thence. I have ſome of it yet by me which I had from his *Lordſhip*. I have deſcribed the place the more punctually: that I may give occaſion to ſome ingenious perſons to make further inquiſition concerning this *Hypotheſis*.

*Pag.*16, 17 But firſt Dr. *French* ſuppoſes great Caverns of Waters to be in the earth which come from the Sea, the heat alſo to be of like proportion with the water; What a conflict this would make in nature, we may eaſily judge, when theſe two enemies fire and water muſt be ſo immured together. I wonder the water being of like proportion with the fire, doth not quench it, or that the fire conſumes not the water, and ſo in both caſes we ſhould want water in our *Springs*, and the world would be deſtroyed: but it ſeems they do better agree and combine to bring about his end;

*Pag.*23. and he tells us how they both dwell together in the Caverns.

Secondly,

Secondly, this ſuppoſes the earth to be almoſt nothing but Caverns: for if that be true that *Ariſtotle* ſaith concerning *Springs*, that if all the water that runs out of them in one year could be kept in a veſſel, it would almoſt equalize the whole bulk of the earth; and Dr. *French* tells us, there is a like proportion of fire and water in the Caverns; and reaſon tells us, that fire cannot be kept in without a greater quantity of air, which it continually conſumes, then what may we judge concerning the Caverns? *L. 1. Meteor c. 10.*

Thirdly, this implyes the Earth to be almoſt nothing but *bitumen* or *Naphtha*, nor will his new generations be enough to maintain the expence.

Fourthly, this ſuppoſes all the Earth to be on fire, ſince almoſt in all places there are Springs, and conſequently contradicts the whole ſuffrage of Philoſophers, who call the Earth *Elementum Frigidiſſimum.*

Fifthly, the Earth would in time be conſumed by ſo many fires, as ſaith *Agricola*, it being of a calcinable and

combuſtible matter.

Sixtly, If it were ſo, then the water would have a bituminous taſte or ſmell, which we know it hath not ordinarily, it not differing in quality from thoſe waters which are wont to break out in the manner of *Springs* after great rains, of which ſort we have many break out in moiſt years on the *Wolds in York ſhire*, commonly called by the name of *Gypſies*.

Laſtly, its not probable that there are ſo many fires in the earth, becauſe thoſe that dig in *Mines* in ſeveral Countries, do meet uſually with water which moleſts them but no fires.

But to proceed, if the *percolation of the Sea* were the cauſe of *Springs* then we ſhould uſually have the moſt plentifull *Springs* near the *Sea*, by reaſon of the nearneſs to their Fountain; when as to the contrary we find, that thoſe Towns which are ſcituate near the Sea, are more deſtitute of water, then others that are more remote. Again thoſe *Springs* that are upon the *Sea* ſhore ſhould probably ſympathize in their growth, or decreaſe with the *Sea*; and

ſo

ſo at the Spring-Tides ſhould flow more plentifully, and at Neap-Tides more ſparingly, as thoſe *Springs* I juſt now ſpake of, the *Gypſies*, are more or leſs according to the rain, whereas no ſuch thing is obſervable in the other. Nor is this *Spring* of which we treat, to wit, the *Spaw*, which is upon the level of the Spring-tides, and ſometimes overflown by them, in the leaſt wiſe altered by them, as ever I could obſerve to flow more freely at the Spring-Tides, and ſlower at the Neap-Tides, when the *Sea* is at ſomewhat a further diſtance; nor yet is its taſte altered in the *leaſt*; or its efficacy in working, (notwithſtanding which I think it hath ſome Salt in it from the *Sea*, and is thereby exalted in ſome qualities.) Whereas it is very obſervable, notwithſtanding it breaks out of the ground, within three or four yards of the foot of the cliffe, which is near forty yards high, and within a quarter of a mile there is another hill, that is more then as high again above the Cliffe, and a deſcent all the way to the Cliffe, ſo as the rain

The Spaw not altered by the Tides.

water cannot lie long upon the ground: I ſay nevertheleſs it is obſervable that after a long rain the water is altered in its taſte, and leſſened in its operation. Indeed a rainy day or two will not hurt it at all.

But is altered by Rain.

Another thing which perſwades me againſt this opinion of the Seas percolation to be the cauſe of Springs, is this, *viz.* The Earth which is covered with the Sea-water, is ſo ſaddened with its weight, that it does not ſeem to admit of any Channels or paſſages for its conveyance, and the nearer you digg to the low water mark, ſtill the ſadder and firmer it is; So as the very roads which are continually beaten with horſes and carriages, are not ſo ſad, and its probable, ſtill the further the ſadder, which ſeems to be confirmed by the ſtrong fixing of Anchors. A ſemblance whereof we ſee in ponds, which being newly digged, the water that runs into them, ſinks ſoon into the earth, and they become dry again, till after ſome time by often filling, the earth becomes ſo ſolid through the weight of the water, that they leak no

no more, but hold water up to the brink.

But to return to the ground of the opinion, which is built upon the Seas ſole ſufficiency, to afford ſo great and conſtant a ſupply of waters to feed the *Springs*: I eaſily grant it to be the beſt Store-houſe, and do only diſſent about the manner of conveyance, of which I ſhall have occaſion to ſpeak by and by.

And for the other ground, becauſe the *Sea* is not increaſed by the multitude of waters that flow into it daily, which it muſt of neceſſity be, if they had not by their ſubterraneal Channels a recourſe to their fountains: *Plato* indeed hath a ready Anſwer to it, telling of I know not what great Abyſs, which he calls *Tartarus*, and makes it the Original Fountain of all waters, into which by the Caverns of the earth, he will have the Sea to empty it ſelf of its ſuperfluity. If this *Tartarus* be *Hell*, he is ſurely miſtaken, for *Dives* found no water. *Valeſius* indeed interprets it be the ſame with *Moſes* his Abyſs, or elſe ſome *De Sac. Phil. c. 63.*

hidden part of the Sea. But this I pass over as one of the Philoſophers dreams, being alſo confuted by his Scholar *Ariſtotle*, who gives a full Anſwer, which may ſatisfie any man, with whom agrees *Freigius* in his *Hydrography*. An immenſe quantity thereof, they ſay, is ſpent in vapours, which by the Sun and the heavenly bodies, are drawn out of it daily, and converted into rain, ſnow and hail, as alſo much is dryed up with the wind, to which Mr. *Lydiat* conſents. Another large quantity is ſucked up by the earth, as is evidently ſeen near great Rivers, where the adjacent grounds are ſo much moiſtened, that near them there is a more ſignal fertility then in places more remote. And then again *Ariſtotle* ſaith, That the Sea is not ſo much the end of the waters to which they run, and wherein they are ſpent, as the beginning and fountain of them, from which they flow; and ſo what was ſpent in exhalations, is but regained by the deſcent of ſhowers of rain and ſnow, the Springs and Rivers paying Tribute according to their Receit; and hence it

Lib. 2. Met. c. 4.

Hydrog. p. 442.

In præleſt. Aſtron.

Ibid.

it comes to paſs, that the Sea is neither fuller nor emptier. And beſides, *Valeſius* gives another Anſwer, *viz.* The The Sea is as much extenuated and diſſipated under the *Zodiack* by the exceeding heat, as it is augmented and increaſed under the *Poles* with rain and ſnow. And this may ſuffice to be ſaid concerning the firſt opinion of the *Original* of *Springs, viz.* The *Percolation of the* Sea. *Ibid.*

SECT. VIII

THE ſecond Opinion is, That *Spring-water* is generated in the *Earth*, and that either by tranſmutation of *earth* into water, or of *Air*, as others. Of the former Opinion was *Seneca* the Philoſopher, who as he was the *Author* of that fancy, ſo I think he is alone, for I find none of his Judgement. *The ſecond Original.* *Lib. 3. Nat. quæſt. c. 7*

That the Elements may be tranſmuted one into another, eſpecially thoſe that are placed neareſt one another, agreeing together more in quality then the reſt, is the doctrine of *Ariſtotle*, and agreeable *Lib. 2. de gener. c. 8.*

agreeable with reaſon, and very obvious to the ſenſe. I can eaſily believe, that the thinner parts of the earth may be turned into water, as alſo the groſſer parts of water into earth; ſo the thinner and more ſubtile parts of water into air, and the groſſer parts of air into water, and therefore it may be true that *Seneca* ſaith, although it is rejected by Mr *Lydiat*; But that the earth which is a dry body, and accounted by Philoſophers *Elementum Siccisſimum*, ſhould by tranſmutation afford ſo much water, or the hundred part of what flowes out of *S*prings, is a thing ſo void of reaſon, as it needs no arguments to diſprove it, and is not likely to gain many Followers.

De Origin. font.

I therefore paſs on to the other of the tranſmutation of *air* into *water*, performed in the Caverns of the earth, which by cold converts the *air* into water; an opinion much more plauſible then the other, having alſo the authority of *Ariſtotle* to defend it, who will have it made in the earth, as it is in the middle region of the air, where by con-

Li. 1. Meteor. c. 11.

condenſation of vapors water is made, and he is followed by Dr. *Fulk* in his book of *Meteors* and H. *ab Heers*.

But this opinion leads alſo into inextricable difficulties and abſurdities. *Spadacr.* And firſt, he told us in the end of the tenth Chapter, that ſo much water runs out of the earth in one year, as if it were kept in a veſſel, it would equalize the bulk of the whole earth, (notwithſtanding he is ſufficiently ſcourged by *Agricola*, *Cardan*, *Scaliger*, and others for it) and reaſon tells us that more then ten parts of *air* will not ſerve for the making but of one part of water, as *Scaliger*, and Mr. *Lydiat* do both obſerve, *de orig. font.* (I think twenty would be too little) then it would follow neceſſarily from theſe premiſes, that the earth ſhould be almoſt nothing but empty Caverns of *air*, when nevertheleſs thoſe that dig mines in all Countries, ſometime two or three hundred fathom deep, do find no ſuch thing, but a ſolid body all along. *In Subt. exerc. 46.*

Secondly, this implyes ſuch an expenſe of air, as the whole Element of *air* would

would not suffice to feed that gulfe. *Bodinus* saith it would not be sufficient for one day, and therefore he laughs at the Philosopher. But certainly it had been long since extinct out of the mess of Elements, if *Aristotle* had been in the right in this controversie.

Lib. 2. Theat. nat.

Thirdly, for a continual supply of so much *air*, as is requisite to be converted into water, to supply all the Springs there should be found in several parts of the earth, great and constant indraughts and suction of *air* into the Caverns, with exceeding great celerity and violence, which no man ever did find, nor any *Geographer* make mention of.

Fourthly, how comes it to pass that any winds break out of the earth, as *Aristotle* teaches in his book *de mundo*, which he terms by the names of *Apogei* and *Encolpiæ*, and that all the *air* is not rather turned into water, to supply his constant generation of Spring water? And how can two such violent motions of the *air* stand together, especially seeing he tells us elsewhere, that it is contrary to the nature of the wind (which

Cap. 6.

L. 2. meteor c. 12.

is

is nothing but *Aër motus*) to blow contrary ways at once.

I ſhall therefore paſs over this Original alſo as not ſoundly principled, and proceed to examine the laſt opinion.

SECT. IX.

THE third and laſt opinion that I meet withal in the controverſie about the *Original* of *Springs* and *Fountains*, is, That they are cauſed by *Rain* and *Snow*; of which I find *Albertus Magnus*, and *Georgius Agricola* the moſt eminent Patrons. The ſum of what they ſay is thus:

The third Original

L. 2. meteor tract de Orig. flum. Agr.

The *Snow* and *Rain* falling from the clouds in great abundance upon the earth, do by moiſtening the ſuperficies, cauſe it to bring forth Vegetables, whereas otherwiſe it would be barren through dryneſs, and conſequently not habitable: The remaining part (except what ſuddenly runs into Rivers) ſinks down by ſecret paſſages into the earth, with which the ſuperficies doth

Lib. 2. de ort. & cauſ ſubter. c. 3.

doth abound; (which are like unto small fibres of veins, not discernable by the eye, terminating in the skin in all the parts of our bodies) and in rocky ground it runs through the clefts, and by them is conveyed to the subterraneal channels more or less deep in the earth, where it is concocted by the earth, and moves as blood in the veins, receiving many times a tincture, according to the nature of the earth, and the Minerals, or Metalls by which it passes, helping forward also their generation.

Rain and Snow the true Original of Springs.

This water at length in its passage through the veins of the earth, finds vent, and runs forth, which place of eruption we call a *Spring or Fountain.*

What a Spring is.

And this springing forth or eruption of the water, I conceive to be made not by any forcible agitation, compulsion or violence, that is put upon it *ab extra* within the earth, or by suction from the Sun and the heavenly bodies, or by heat which may be in the earth, or by any spirits that are in

Whence its ebullition.

in the water it ſelf, but from its own natural inclination and tendency towards its proper place aſſigned to it by the Creator, which (as I ſaid in the ſecond Section) is the convex part of the earth, it not reſting till it meets with its natural correſpondent the *Air*, under which it muſt needs lie, becauſe of its greater gravity, as above the earth by reaſon of its levity.

And this I think to be the natural reaſon of its ebullition out of the earth; and I find *Scaliger* in his *Subtilities*, of the ſame judgement, it freeing nature from a violent force, which the working fancies of men would put upon it, who yet cannot agree among themſelves. *Exerc.* 100.

But as for ſubterraneal lakes that are found in the bottom of great Caverns of the earth, they are ſtanding warers, oftentimes of poyſonous quality, as I hinted in the ſixth Section, which having room enough, and ſupplyed with air above them, I think they incline not to motion, and do contribute nothing to Springs, nor can any ſubterraneal heat, which Dr. *French* ſuppoſes to be in *Subterraneal lakes contribute nothing.*

in theſe Caverns, extract a wholeſome water out of them.

And this *Rain* or *Snow*-water in the Channels, where ever it finds vent, it continues to flow ſo long as the Channels by which ſuch a Spring is fed, have any water to ſupply them, and that is more or leſs according to the wideneſs or length of the Channels, or otherwiſe according to the number that meet together, it not reſting till it meet with the air: And therefore it is obſervable in pipes that convey water from one veſſel to another, the water will flow till all its ſtore be ſpent, whether the motion be upward or tranſverſe, till it meet with air, and then it ceaſes to flow; for if one bore a hole in the pipe, and let in air, the motion is done.

Theſe Channels alſo are furniſhed according to the quantity of *Rain* that falls, and the advantages they have of receiving it, by the ſmall and ſecret paſſages that come from the ſuperficies of the earth, which concenter in thoſe Channels.

Now

Now this opinion of *Rain* and *Snow-water* to be the Original of Springs, is illuſtrated with many arguments of demonſtration by the Authors before mentioned, and others of this judgement, the principal whereof are theſe. *Arguments to prove.*

Firſt, Becauſe it is found by experience, that Fountains, and conſequently Rivers, are greater and do abound more with water in Winter and moiſt weather, then in Summer.

Secondly, In thoſe years when great floods of Rain do fall in Summer, and great ſtore of Snow in Winter, we find Springs durable, whereas in droughty ſeaſons when there is but little or no Rain or Snow, the Springs dry up. A ſure proof whereof we had in *England* in the years 1654, 55, and 56. when our Climate was dryer then ever any Stories mention, ſo as we had very little Rain in Summer, or Snow in Winter, moſt of our Springs were dryed up, even ſuch as in the memory of the eldeſt men living had never wanted water, but were of thoſe ſorts of Springs which we call *fontes perennes*, or at leaſt

were esteemed so; which if they had received their supply of water from the Sea, or from the air in the earth converted into water, they could not have failed of water.

A third Reason which perswades to this Original, is, because in those Climates and Countries where little Rain falls, few or no Springs and Rivers are seen. As in the deserts of *Æthiopia*, & in most parts of *Africa* near the Equinoctial they have little water, and many times in two or three days journey can hardly find enough to quench their thirst and their Camels, as Historians relate. And so in *Egypt* where it rains very seldom, but they are supplyed instead of it by the overflowing of *Nilus*, there are no Springs at all. So also in *Ombrion*, one of the largest Islands among those that are called *The Fortunate Islands* or *Canaries*, it never rains, and therefore there are no Springs nor Rivers, as *Ovetanus* and *Martyr* do both witness; The Inhabitants indeed are supplyed with water for themselves and their Cattle, by an admirable *providence of God*, from a certain

certain *Tree* that grows frequently there, which diſtills from its leaves every night an abundance of water. Whereas in *Britain*, *Germany* and *France*, and other Northern parts of *Europe*, there are great plenty of Springs and Rivers, in regard they do abound in the moiſture of the air, and great falls of Rain and Snow.

To the firſt Mr. *Carpenter* objects, that the abounding of Rivers with water in Winter, is from the ſtore of Rain or Snow-water, that runs into them from the higher grounds, and not from any great quantity of water that falls into them out of Springs and Fountains. *Object.* *Georg. lib.* 2. *c.* 9.

I deny not but the Rivers are inſtantly heightned in Winter from Rain, ſo as on the ſudden they will often overflow their Banks, but that water is ſoon ſpent in the Sea: It is ſufficient for defence of the point in hand, if after that water in reaſon ſhould be ſpent, they be yet maintained more plentifully by the Springs, then uſually they are in Summer; at which ſeaſon of the year, though they be filled with a ſudden Flood of Rain, yet wanting the conſtant bene- *Sol.*

volence of the Springs, they ſuddenly fall as low as they were before.

Object. *Lib* 3 *Nat. Queſt. c.* 7

Another *Objection* I find ſtarted by *Seneca*, as alſo by M. *Carpenter* in the place before cited; to wit, that the greateſt Rain that can fall never ſinks above ten foot into the ground; and *Seneca* cites his own obſervation for it in the digging of Vineyards, and he gives this reaſon for it, becauſe when the earth is once ſatisfied with ſhowers, it oppoſes it ſelf againſt the overplus by ſhutting its pores.

I own it thus far, that into the ſolid earth the Rain ſinks not above ten foot, although learned *Cardane* allows it ten paces or fathomes, his words being *non ultra decem paſſus deſcendere.* But what becomes of that immenſe quantity of rain, which continues for many weeks together, nay oft times ſome months, wherein we have ſcarce a fair and dry day; beſides the infinite quantity of wet and Snow that is falling all Winter long; cauſing inundations of water over all the Country round about, not only upon thoſe grounds neer unto rivers,

SOL.

De var. rer. c. 6.

into

into which it may run *per declive*, but in plains from whence it can have no Current at all; Can it be ſuppoſed that ten foot of earth will drink up all this water, which who ſo ſhall dig ſoon after the water is drunk up, ſhall not find it very moiſt or muddy, which it would aſſuredly be if it had not ſome ſecret paſſage into the Caverns of the earth, much deeper then they ſpeak of? And therefore *Cardane* in the place before cited, adds, that the earth is ſadned with the Rain, ſo as it lyes above, unleſs by ſome empty crevice, or cleft, it ſink deeper into the earth; which is all I contend for, it being obvious to our ſenſes that the earth is ſo full of crevices, clefts and pores, except when they are cloſed with a long froſt, that the wet lyes not long above, but ſinks into the earth, and which being granted will be ſufficient to quicken and continue the Springs.

And to *Seneca's* obſervation before mentioned let me oppoſe *Albertus* his experience, who tells us that at the bottome of a ſolid rock, one hundred *Lib. 2 met. trast. de orig. fluv.*

and

and thirty fathome deep, he ſaw drops of water diſtil from it in a rainy ſeaſon.

Object. Lib. 3. Nat. queſt. c. 7. Another Objection that *Seneca* makes againſt the point in hand is this, on which he layes much ſtreſs; That the great mountains of Rock and Stone which have little or no earth on them, and on that account not capable of receiving much rain, do nevertheleſs yield great and laſting Springs, which are never drawn dry.

Solut. This makes nothing againſt, but rather for the point in controverſie. There are no Rocks but they have their *Commiſſuræ*, joynts or clefts: now the Rain and Snow water can run more plentifully into thoſe joynts and clefts of the Rocks, and more ſpeedily, then when it fals upon the ſolid earth; And in that he ſaith they are not covered with much earth, they are the leſs robbed of what falls from the clouds, and ſo are better ſupplyed. To this I'le further add, that Rocks have more large and ſpacious Caverns, and conſequently fitter receptacles for the water, then ſolid

ſolid earth hath. Adde to this that Rocks are uſually many together, covering much ground, ordinarily a whole Country is nothing but Rocks, and ſo can receive much wet, and their ſtore by their nakedneſs of earth hath a freſh ſupply from every ſhower that falls. And therefore on all theſe accounts, as they have advantages of ſpeedy reception of what falls without diminution, and capacities for admiſſion of greater quantities of wet then other ſoyles have, ſo they may very well afford more plentiful and durable fountains.

Beſides it is obſervable, that in the ſolid clay ſoyles, it is very rare to find any eruption of water, becauſe ſuch are ſad earth, and have few or no Caverns or Channels in them, but our Springs break out ordinarily in Rocky-gravelly ground, eſpecially the beſt water, and moſt laſting Springs, ſuch as we call *fontes perennes*.

Another *Objection* that *Seneca* makes againſt it is this, that in the dryeſt ſoyle, where they dig pits two or three hundred foot deep, there is often found great *Object. Ibid.*

great plenty of water, which no man can ſuppoſe to have come from the clouds, but he thinks it of that ſort which is wont to be called *living water.*

Solut.

From whence then ſhould it come, from the Sea? perhaps the Sea is as many miles from that water as the ſuperficies of the earth is feet from it, and may much more be queſtioned. But we may remember *Seneca's* judgement concerning the original of Springs is, that they are generated by tranſmutation of earth into water; an aſſertion ſo ridiculous, as he is laughed at by M. *Lydiat*, and never had any as yet to take his part. Perhaps it may come from the tranſmutation of air into water, for ſuch tranſmutation I cannot deny; wee ſee Churches become wet before rain falls from this cauſe: But its moſt probable to come from Rain, which may poſſibly pierce by its crannyes much deeper then he ſpeaks of, as I have ſhewn already. Our Miners do tell us, that in Winter after great inundations of Rain, they are much troubled with water in the bottome of their

de Origin. font.

their Mines, finding it frequently diſtilling through the ſolid earth upon their heads by the ſecret capillar veins, (as I may call them) that come from the ſuperficies of the earth, whereas in Summer or dry ſeaſons they find no interruption at all. Touching the terme *living water* which is uſed by *Seneca*, I think no more is meant by it, then ſuch as flows from everrunning fountains, which therefore in Engliſh we commonly call *quick Springs*.

But to proceed, Dr. *French* Objects concerning the increaſing of Springs in Winter, that it is not univerſally true, and he inſtances in St. *Mugnus* Well, concerning which he was informed by the woman that keeps it, that it begins to riſe about *May*, and falls in *October*; as alſo that of *Pliny* in *Cydonia* before *Lesbon*, that flows only at the Spring. *Object.* *York Spaw* p. 4. *Nat. Hiſt.*

There is no Rule ſo general but it may admit of an exception; its enough if it be generally true, though not univerſally ſo. He inſtances in two only, although ſuppoſes others: I might without *Sol.*

out much ado inſtance two hundred, and ſuppoſe very many more, and an induction of ſo many particulars is accounted by Logicians an Argument of great force. Moreover as for that of St. *Mugnus* well, he doth not ſpeak upon his own knowledge, if he had I would not have queſtioned it, for I honour his memory and learning, he only cites the woman for his Author whom he truſted too far. I have enquired of the *Sir. T. H* Honourable Knight and his Lady who own the ground, and they never heard it obſerved by any, that the Well ſhould riſe in *May* or the Summer months, and decreaſe towards Winter. Likewiſe *M. R. W.* of another Gentleman that lives hard by the place, having good advantages to know it, being brought up from his childhood within a mile of it, and he aſſures me upon his own knowledge it is not ſo.

If any would know more concerning *St. Mugnus well* this Well, *I* refer him to Dr. *Dean* and Dr. *French* their Books upon the *Spaw* at *Knaresbrough*. It is a quick Spring that runs plentifully over, within four-

teen

teen miles *Weſt* of *York*, of great repute for curing the Rickets in Children, whom they dip into it naked, and hold them in it a little while; but they muſt obſerve to dip five, ſeven or nine times, more or leſs, according to cuſtom, or ſome think it will not do; and this they continue for ſeveral days together; when they take them out, they put them into a warm bed, where they ſweat a while. It is alſo uſed for Cramps in the joints, and lameneſs for elder people, who will ſometimes ſtay in it half an hour or more at a time, for a few days together, and many think it hath done good in both caſes: Whether it partake of any Mineralls or no its doubted. Dr. *Dean* thinks it doth not, Dr. *French* thinks it doth, onely becauſe of the effects of it, for it ſeems not to have any perceptible quality different from our ordinary and beſt ſort of Springs, being exceeding cold in Summer when they uſe to bathe in it, and warm in Winter. But whether theſe effects proceed from a ſuperſtitious conceit of this *Sainted* Well, which raiſes the imagination of ſome, or ſome

Mineral

Mineral quality, or rather (which I moſt incline to) from the exceſſive coldneſs of the water, which repells the natural heat from the joints to the inward parts, till coming out of the Well into the warmer air, or a bed, it recoyles to the joints agan with more force, and makes a new fermentation in the humours which is furthered by Sweat; I ſay from which of theſe I will not determine. If any think fit to make tryal in the like caſes with any other cold Spring, they may perhaps find as much benefit, as ſome have done in another Spring within half a mile of this City of *York* for the Rickets in Children, from which they report they found ſome good for that diſeaſe. I have often cauſed Children to be dipped in other cold waters, both Sea and Spring-water for the Rickets, with deſired Succeſs.

As for the other of *Plinies* mentioning, that flows at the Spring, I queſtion not the Truth of it. But this is to be obſerved, that in the Southern parts of *Europe*, as alſo elſewhere, they have but little

little Rain in Summer, yet having many exceeding high mountains, as the *Alps* and the *Pirenæans*, which are elevated near the middle Region of the air, theſe are Receptacles of great quantities of Snow, which lyes all winter, and melts not becauſe of the intenſe coldneſs of the air, till the Sun come near to the Equinoctial point, which is about the eleventh of *March*, and thence it may come to paſs, that ſuch Springs as are ſupplyed from that melted Snow, do begin only to flow at the Spring, which having but ſcant and narrow receptacles, may ſoon be drawn dry, and ceaſe flowing.

And here let me obſerve as I paſs, that the greateſt Rivers in *Europe* have their beginning in thoſe hills, and do begin to flow moſt violently at the Spring when the Snow melts, to wit, *Danubius*, otherwiſe call'd *Iſter* the greateſt River in *Germany*, as *Auſonius* in his Epigrams relates, which *Franciſcus Irenicus* in his deſcription of *Germany* ſeems to equalize with *Nilus*; and *Rhodanus* and *Rhenus* two Rivers of *France* L. 8. c. 17.

France, which ſtretch themſelves from the *Alps*, the one to the Mediterranean Sea, the other to the *Germane Ocean*, as *Caſſanæus* mentions, and perhaps this Spring of *Plinies* may come from ſome ſuch cauſe.

Cat. Glor. Mund. 12. par

Object. pag. 4.

But Dr. *French* Objects further, that notwithſtanding that which can be ſaid, though the Springs which were before dryed up in Summer, do break out again after Rain, yet it doth not follow that Rain is the materiall cauſe of Springs, for (ſays he) their drying up was not for want of Rain to ſupply them, but by reaſon of the dryneſs of the earth towards its ſuperficies, which attracts to it ſelfe the water of the Springs to ſatisfie its drought, which it doth again let go, when it hath drunk plentifully of the ſhowers from heaven: And he inſtances in Rivers, which in Summer will many times be dryed up, although ſome fountains at the ſame time do run plentifully.

Solut.

Perhaps the Earth may drink a great part of the water of Rivers as they paſs along, and thence it comes to paſs, that

that near Rivers the earth is more fertile, and in Summer thoſe meadows not ſo much parched with heat as elſewhere; and thence it is that they flow low, having probably but a few Springs to ſupply them, in compariſon of what they had, many being dryed up by reaſon of the heat of the weather and want of Rain. And that the ſuperficies of the earth near *Springs* may drink up ſome of their moyſture, we may well ſuppoſe, but that cannot be much, nor the attraction of ſuch force as to draw from far, ſo as to weaken the current of a *Spring* conſiderably, much leſs to dry it up, for as much as the water of Springs is not diffuſed abroad as the water of Rivers is, but pent up in a narrow Channell through which it paſſes.

Again, ſince it is true as Naturaliſts tell us, that the heat of the Sun pierces not above ten foot into the earth to dry it, the water that ſuch a little quantity of earth may need, or can draw, will not be in any proportion towards the drying up a Spring, eſpecially ſeeing it lyes in a narrow channell, and alſo perhaps riſes upright out of the earth like a boyling pot.

And

Object. And whereas he objects again, that the moſt part of the Rain that falls on high places runs into plains, and from thence into Rivers; and where it cannot ſo run, it remains upon the ſuperficies till it be exhaled by the *Sun*.

Sol. I anſwer, We ſee a great quantity of water runs into Rivers after great Rains, when they are nigh at hand; but what becomes of all that which falls in a whole Country far from Rivers, and of the infinite quantity of *Snow* which covered the ſurface of the ground, and ſets all the Country in a flood when it melts, ſo as a man would think it could not be dryed up in many moneths, and this where there is no current at all into Rivers? The moderate heat of the Sun in rainy weather, eſpecially in the winter months, is ſuch as it cannot be thought to exhale the tenth part of it into vapours, and yet in a few days its all gone, and no footſteps of it left ſave in the Roads, where by the continual beating of the horſes, it is ſo ſadned, that it cannot ſink of a long time.

As for that place of *Seneca* which he urges

urges, I have anſwered it already in this Section: And for the digging of Wells, where ſometimes no water can be got two or 300. foot deep, before we come at Springs: That may be, and yet make nothing againſt the waters ſinking much deeper, ſince though there be many Channels of water in the earth, yet it is poſſible to miſs them in ſuch a narrow compaſs as a Well, and yet there may be ſtore of water near hand.

Nor can the duſt or dirt, which he ſaith, may be conveyed by the water into the veins or crannyes, by which it ſhould paſs down into the earth, hinder it any more, then the excrementitious humors that are in the bowels, do hinder the chyle from paſſing into the *Lacteæ* or Meſentery veins, and ſo to the Liver; both which may be thereby hindered in part ſo as they cannot paſs ſo ſpeedily, yet it is not ſo in all bodies, nor all over the ground, only in ſome places it lyes above the earth a while, before it can finde paſſage down.

Another Objection which ſome make againſt this opinion of the Original of *Object.*

Springs by Rain and Snow is this, that although all this ſhould be granted, yet they think there doth not ſo much Rain and Snow fall, as may ſuffice to ſupply them with ſuch abundance of water as they vent.

Solut. I would have ſuch to conſider what have been already ſaid concerning the immenſe quantity of wet that falls in Winter, beſides the great Spouts of Rain, that ordinarily every year at ſome time or other are falling in Summer, which often ſets the whole Country in a Flood, together with other frequent ſhowers, and whether there is not a reaſonable proportion of wet for ſupply of the Springs, eſpecially while we conſider the paucity of great Springs, and the diſtance that is betwixt one Spring and another, ſometimes two or three miles of ground affording but a few Springs, and thoſe perhaps of very ſmall currents, moſt Towns being ſupplyed with Well water of which very little is loſt.

Again, it is very obſervable, that a great quantity of that water that runs out-

out of Springs that are placed on high ground near hills, is in its paſſage ſucked up by the earth, as is alſo the water of Rivers, and ſo is conveyed by ſecret veins into the ſubterraneal channels and ſerves to give being to nether Springs that break out in lower grounds. Nor need this aſſertion ſeem ſtrange to any, ſeeing we read of great Rivers that hide their channels in the earth for many miles together ſometimes, and break out again, as the *Rhine* in *Germany*, cited by *Seneca*; *Eraſenus* in *Argolica*; *Padus* in the *Alps*; but more remarkable, is that of the river *Guadiana* in *Spain*, as Mr. *Grimſton* relates; which runs under the ground for the ſpace of thirteen leagues, and neer to a Town called *Villa Horta* breaks up again; which gives occaſion to that brag of the Spaniards, concerning a bridge in *Spain*, on which is daily fed 10000. ſheep. Nor doth our own Country want ſuch preſidents; the river *Rye* in *York-ſhire* runs under ground a quarter of a mile together, and breaks out again neer *Helmſley*, and I am informed of

Lib. 2. Nat. Quæſt.

States and Empires

like neer *Grantham* in *Lincolnſhire*. Yea and thoſe great Seas in *Aſia* are thought by *Scaliger* and *Wendiline* to have ſubter-raneal paſſages from one to another; the *Caſpian* into the *black Sea*, that into the *Ægean*, and this into the *Mediterranean*.

Exer 37. *Adm. Nil. cap.* 8. *Sect.* 25.

SECT. X.

Rain and Snow the true Original of Springs.

HAving thus weighed and anſwered the moſt material exceptions, that are made againſt this Original by learned men, I cannot but joyn in judgement with *Albertus* and *Agricola*, yet not altogether excluding the other two, eſpecially that of the *percolation of the Sea* to Springs neer adjoyning; but how ſuch as break out on high Lands, and at great diſtance from the Sea, can be thought to be ſupplied from thence, or otherwiſe then by the ſhowers that fall from heaven, I confeſs I ſee not, notwithſtanding the Arguments they produce to make it out. And therefore

learned

learned Dr. *Jordan*, notwithstanding he inclines strongly to the Seas Original, as we have heard already, yet is forced to grant at length, that if any Springs be higher then the Sea, (and I have proved they are all so) they may then proceed from Rain and Snow. *pag 19. nat. Baths.*

Nevertheless we must not forget from whence Rain and Snow do naturally proceed, and that the Sea is the principal storehouse for the generation of vapours, out of which they are made by condensation, the Earth and the moyst bodies thereon not affording any proportionable quantity to the wet that falls from the clouds.

I shall now hasten to a period of this dispute, being only willing to illustrate what hath been said, by a quotation out of learned and laborious Dr. *Heylin*, in his *Cosmography* the second Edition *p.* 667. where treating of *Cyprus* an Island in the Mediterranean Sea, in length two hundred miles, and sixty miles broad, he tells that in the dayes of *Constantine the great*, there was an exceeding long drought, so as for thirty

six years they had no rain, in so much as all the Springs and torrents or Rivers were dryed up, so as the Inhabitants were forced to forsake the Island, and to seek for new Habitations for for want of fresh water. Now if the Sea had been the Original of the Springs they could not have wanted water, it being an Island and not very great; or if the transmutation of air into water in the Caverns of the earth, there could have been no defect, since the Caverns were the same; so that its evident the Springs proceeded from the Rain, which failing they were dryed up.

Likewise whosoever shall compare the water which flowes out of Springs, with that which immediately falls from the clouds, shall find such a full and perfect agreement betwixt them in all qualities perceptible to the senses, as its hard to distinguish the one from the other. Besides that exact identity of the water of ever-flowing Springs and of the *Gypsies* I mentioned before, which break out in the *Wolds* in *Yorkshire*, and elsewhere, after a great inundation of Rain, which

if

if they proceeded from ſeveral cauſes, muſt probably differ in their qualities and effects.

Laſtly the two Rarities I mentioned in the beginning, that are to be found upon the Caſtle-hill in *Scarbrough*; to wit, the deep Well that reaches to the bottom of the Rock, which hath no water, and the Spring Well which is within half a yard of the edge of the Rock towards the Sea, which never wants water, doe ſomewhat illuſtrate the point in hand. For the deep Well being ſo neer the Sea, ſhould probably have water in it, if there were any ſuch percolation as is ſpoken of; or if air were ſo plentifully tranſmuted into water, it ſhould not be dry; which yet it is, there being no Channels that empty themſelves into it; while the other which is upon the top of the Rock, not many yards deep, and alſo upon the very edge of the cliffe is ſupplyed, which doubtleſs is done by ſecret Channels within the ground that convey the Rain and ſhowers into it, being placed on a dependant part of the Rock,

near unto which there are also Cellars under an old ruinated Chappel, which after a great rain are full of water, but but are dryed up in a long drought.

Thus I have done with the dispute about the Original of Springs, having examined the Opinions of the Learned, and faithfully produced their most cogent Arguments, which I have lifted according to my Talent, and declared my own modest thoughts and opinion, whereto I shall adhere, till I meet with better reasons for *conviction*.

The nature of Spring water. De simpl. med. fac. c. 4.

I now proceed to consider of the natnre of Spring water, which doubtless is the best of all others for general use, eminently excelling in the essential parts of water, *viz.* cold and moysture, as *Galen* saith. Nevertheless some Springs are better then others. *Hippocrates* prefers such as flow out of Rocks and Hills of gravel or stone, as more clear and white then what coms out of other soyls; as also such Springs as are cold in Summer and warm in Winter, which is assuredly found in them, if their fountains be deep in the Rock, and this is

It is the best sort of water.

a

a ſure token whereby we may diſtinguiſh of Well-water alſo. And to this of *Hippocrates* I might join the whole ſuffrage of all Philoſophers and Phyſicians that have writ upon this Subject. To ſum me up all in a word, beſides what was ſaid in the ſecond Section: The principal token of good and wholeſome water is, that it be ſimple or unmixed, and then it loads not the ſtomack, and eaſily paſſes through the *Hypochondres*, being alſo ſoon hot and ſoon cold. *Tokens of good water*

I find ſome of the Ancients were wont to weigh their water, and accounted that the beſt which was the lighteſt; and for this cauſe it ſeems it was, that the *Perſian* Kings would drink of no water but of the River *Eulæus*, an Attick ſawcer whereof weighed leſs by a dram then other waters, as *Strabo* ſaith. Now *Pliny* tells that an Attick ſawcer was a meaſure of fifteen drams; ſo then it was a fifteenth part lighter than the other waters of *Perſia*. And the *Parthian Kings* on the ſame account drank of the Rivers *Choaſpes* and *Eulæus*, as the ſame *Pliny* witneſſes. And thus *Athenæus* com- *Lib.* 15. *Geograph.* c *ult.* *Lib.* 21. *c. ult.* *Nat. Hiſt. l.* 31. *c.* 3.

Lib. 2. dyæt. c. 2. commends a Spring near *Corinth*, which he calls *Pirenes*, for its levity above all the waters of *Greece*. And there seems to be good reason for it, because its levity is a token of its purity and simplicity, and that it hath no earthy parts, and consequently is easier of concoction.

Aph. 26. Sect 5. Now among the several sorts of fountains, *Hippocrates* commends most those that open towards the East, as the lightest and fittest for all ages and constitutions; and next to them such as run towards the West; but as for those that open towards the North, he thinks them to be cold and hard of digestion, in that they want the heat of the Sun; and he accounts those the worst that run Southerly, because their thin parts are exhaled by the heat, and so the water becomes gross. But we need not fear that in this our Climate where the Sun is not so hot, nor need those that are healthful, be so scrupulous concerning their water, if it be Spring-water especially, nor whether it runs East, West, North or South, they being all indifferently good and wholesome.

Now

Now ſometimes it happens that ſprings break out where there was never any before, as in great floods of Rain and Snow, which the ſubterraneal channels cannot receive; but theſe are but of ſhort continuance. So after Earthquakes, as *Seneca* mentions, & ſo *Theophraſtus*, that in the mountain *Corycus* after an Earthquake many Springs brake out. And thus after the cutting down of Woods and Groves, as *Pliny* tells us in his *Nat. Hiſt.* And *H. ab Heers* cites a paſſage to this purpoſe out of *Ambroſius Perez*, who writes that in the City *Baja*, a great Tree being torn up, to make room for the building of a Colledge for the Jeſuites, there brake out a Spring of good and wholeſome water; a channel of water running under it, was it ſeems broken up. So alſo the ſtopping of the mouth of a Spring in one place, may cauſe it to break out in another, as we ſee by ordinary experience.

The Reaſons of the breaking forth of new ſprings.

Lib. 3. Nat. qu. c. 11.

Spa dac. p. 16.

Of like nature with Springs, is Well water, onely not ſo good; and among theſe ſuch as are open to the air are better then thoſe that are ſhut, whoſe water is fetched

fetched up by pumping, and the more they are drawn, the better and more wholesome is the water.

Many rarities in Springs

There are also many rarities to be discovered in Springs, both in their operations on those that drink them, as Dr. *French* hath observed, and I might multiply out of good Authors: as also in their motions in ebbing and flowing, concerning all which its very hard to give a reason.

There is a fountain in *Idumæa* called *Job*, which is every three months of a several colour; to wit, duskie, red, green, and clear.

Another among the *Troglodites* which is three times a day bitter and sweet again.

The fountain *Silva* that flowes out of the foot of Mount *Sion* runs not continually, but on certain dayes and hours. And I read of one at *Colmars* in *Sweden*, which ebbs and flowes at just distances, about eight times in the space of an hour. A like to which we have at *Giggleswick* near a Market Town called *Settle* in *York-shire*, which I mentioned before, that

Gassend. in vit. Peiresk. lib. 5.

that ebbs and flowes every quarter of an hour; whether such as these proceed from a spongious earth, which resists it a while, being but a slow Spring, till it rally new force, and break through the obstruction; or it be from a Spirit in the water, whose impulse puts it forward, but being a penurious Spring, it settles again, as *Saxo Grammaticus* thinks, I will not undertake to determine, having not seen it, till when I will be content to admire it as a secret. *In præfat. Daniæ suæ.*

I read also of a Fountain in *Judea*, which flowes six days, and rests on the Sabbath, and is therefore called *fons Sabbaticus.*

Also of a Fountain in *Epyrus*, which will quench a lighted Torch, and light one whose flame is out.

So among the *Garamantes*, there is a Spring which is so cold in the day time, that one cannot drink of it; and in the night so hot that it cannot be touched.

These and many more of like nature I meet withal in good Authors, especially in *Cassandri* and *Patricius*, where the learned *Catal glor. mund. p. 12. In inst. rei pub l. 7. tit. 9.*

learned Reader may abundantly satisfie his curiosity; likewise in Dr. *Fulks* book of *Meteors*.

To these I'le adde the mention of one more as rare as any before cited, lately found out in the parish of *Pemberton*, three miles from *Wigan* in *Lancashire*, whereof I have most certain information from several persons of quality and undoubted integrity, some of whom *I* procured to view it. *If* a lighted paper be put to the surface of the water, where it is seen to bubble up, it takes fire, and flames very fiercely, so as it will sooner boyl a piece of meat being hung over it in a pot of water, then our ordinary fire can; and which is rare also my Friend assures me, that when it had been so flaming a good while, he put his hand into the water under the flame, and he could not discern the water to be heated at all: And it will continue so to flame till it be blown out, which is easily done even by the waft of an Hat. This is thought to proceed from a sulphurious vapour that breaths out there from a Mine of Cannel coal, (as they call

call it) which is underneath; and was first discovered by a Boy, who in the Mine below, did let a Candle fall into water, where the like bubbling was, that took fire.

SECT. XI.

THe next sort of water which falls under our consideration, is *River Water*. First therefore concerning the Original of Rivers, and then of the nature of that sort of water. *Of River waters.*

The Scripture tells us, *That all Rivers come from the Sea*, Eccles. 1. 7. so as we need not go further to search out their *Original*; nevertheless they consisting of two sorts of water, to wit, Salt and Fresh, we may distinguish, and call the Sea, the Original of the Salt-water, and trace the Fresh up to its Springs and Fountains, and determine that the fresh water in Rivers comes from the Springs; and in this we are not without a president in Scripture, *Gen.* 2. 10. where *Its Original.*

where it is said, *A River went out of* Eden, *which divided it self into four streams*; which intimates, that the Spring from whence those four Rivers had their Original, was in *Eden*. Notwithstanding Rivers have also an additional supply from Rain and Snow, which falling from higher places, do carry down with them the water that is in Lakes, Ponds and Ditches, and fills their Banks.

Its nature. *Hippocrates* will have River water to be altogether unwholsome, being made up of so many several sorts of water, and most of them bad, as also mixt with mud, dirt and slime, breeding diseases of various kinds, according to the nature of the waters; and therefore it is very observable that those Cities and Towns, that are forced to drink of the water of Rivers, are more pestered with Epidemical sicknesses then others that have better water, which *Valleriola* *Lib. 2. loc. com. c. 7.* observed at the City of *Arles* in *France*, which stands in a low and Fenny soyl, having no Springs at all, but the Inhabitants are forced to drink the water of *Rhone*.

Notwithstanding

Notwithſtanding I finde ſome Rivers commended to have wholſom water, as *Eulæus* and *Choaſpes* which I mentioned before, which the Kings of *Perſia* and *Parthia* preferred before any other ſort whatſoever. But above all other the water of *Nilus* is commended by *Ætius*, as having all the properties of the beſt ſort of water. And hence it was that *Philadelphus* the ſecond King of *Egypt*, having married his daughter *Berenice* to *Antiochus* King of *Aſſyria*, cauſed the water of *Nilus* to be carried to her into *Aſſyria*, that ſhe might drink of no other water but that, as *Athenæus* ſaith out of *Polybius*.

Tetrab. 1. *c.* 165.

Lib. 2. *dypnoſ. cap.* 2.

Yea the water *Nilus* ſeems to be equallized with wine, if not preferred before it; for *Scaliger* relates out of *Spartianus*, that when the *Egyptian Army* was ready to mutiny becauſe they had no wine, *Peſcennius Niger* their General appeaſed them with this anſwer; What do you grumble for wine, and have the River *Nilus* at hand?

De ſubt. exerc. 48.

But I muſt not wade too far into this ſtream, leſt I loſe my ſelf and my Sub-

ject, especially since River water contributes nothing to the *Spaw at Scarbrough*, there being none adjacent or near it. Nor have we the water of *Nilus* here, our Rivers in *England* are compounded of several sorts of waters, and therefore not so wholsome; and yet it is the best, or only water that some Towns have for their ordinary use; the water of *Owse* being also most commonly used by this City of *York*, for whose cause especially I will say something more concerning it.

River water is not so good as Rain or Spring Water, the Sun having exhaled the thin parts, it is become more gross, yet it will keep longer then either of the other, and will make stronger Beer then either of them, it being more easily impregnated with the strength of the Malt by reason of its gross parts; but it is not so good for Medicines as the other. Now the reason why it will keep longer then Rain or Spring water is, because it hath passed already some degrees of fermentation by the heat of the Sun, yet the water of some Rivers will keep longer then other. *Baccius* saith the water

Lib. 1. de aq. Tib. c. 2.

ter of *Tiber* will keep an hundred years and not corrupt, the reaſon is becauſe it is groſſe and thick like Oyle, on which account its unwholeſome to be drunk.

River water is not to be uſed after rain till it hath purged it ſelfe, and doth become clear, and its the beſt when it is taken out of the middle of the River, which if that cannot be done, then let it be taken out of ſome deep place, and not where it is ſhallow, alſo above the Cities and Towns, before the filth of the channels run into it. Great care likewiſe ſhould be taken by the *Governours of Cities* that no Carrion be caſt into Rivers, both becauſe it corrupts the water, and deſtroyes the fiſhes; likewiſe that no cloaths be waſhed, or boyes bathe or horſes be watered above thoſe places where the water is taken up, eſpecially in times of common contagion and peſtilential diſeaſes. *In* which particulars the *Antient Law makers* were exceeding careful, appointing certain Officers for the preſerving of their waters, whom they called *Hydrophylaces*, which were

persons of the best quality, and had great immunities conferred on them, and were to see to the putting of the Laws in execution concerning waters, as *Cassanæus* relates out of *Franciscus de Ripa*.

Cat. glor. mund. par. 12. p. 259.

This water being taken up should be kept in large Stone Cisterns, (not leaden which are apt to breed dysenterie fluxes) and those very clean, into which if some gravel stones gathered out of a fresh River were put, it would preserve it longer and cooler. *Valleriola* would have also some little fishes put in to keep it in motion; and when it is first put into the Cisterns, it should be poured through a thick woollen cloath, that no sandy or slimy substance may pass through, River water being very subject to have sediment more then other sorts.

Lib. 2. loc. com. c. 7.

Paulus Zachias a famous Roman Physician tells of a pretty device which was used by Cardinal *Francisco Maria de Monte*, one much delighted in Chymicall experiments, whereby he purified the water of *Tyber*, and made it wholesome to be drunk. He had two large Cisterns of an *Hollands* sort of Stone,

L. 5. quæst. med. leg. tit. 4. q. 2.

that

that was of a porous ſubſtance, which would hold fifteen gallons a piece, theſe were ſo placed that the water that was put into the one, might in ſome convenient ſpace of time diſtil through the ſtone into the other, under which he had a third, which received what dropped through the ſecond. Neither of the uppermoſt was perforated at all, but the water paſſed through the pores of them, in the bottoms of both which there was ever found ſome ſediment; This water ſo tranſcolated was ſo pure and thin, that it would eaſily paſs through the Hypochondres, and the Cardinal told my Author, that he found much benefit in it againſt the ſtone, and that it provoked urine quickly.

I conceive this to be very rationall and a neat way eaſie to be expetimented, and very proper for ſuch as have weak bodies, and yet are forced to make uſe of ſome of the groſſer ſorts of water, whereby they may ſo purifie them, as they may become much more wholeſom, for whoſe ſakes I thought fit to inſert this experiment.

Sect.

SECT. XII.

Of Mineral waters

HAving thus as briefly as I could run through the ſeverall ſorts of ordinary waters, with their Originall cauſes, natures, and effects being taken inwardly, which may ſerve as *Polycletus* his rule the better to judge of Minerall waters, this being as Mathematicians ſay of *linea recta, index ſui & obliqui*; I muſt again reſume the ſubject, which is the principall occaſion of this diſcourſe, *viz.* The *Spaw at Scarbrough*, which though it be a quick Spring or Fountain, yet differs in quality and operation from our ordinary Springs, in regard it hath imbibed the vertues of certain Mineralls through which it paſſes, as I hinted in the firſt Section; to wit, Vitriol, Iron, Allome, Nitre, and Salt; Concerning the nature of which Mineralls I ſhall ſay ſomething, and then proceed to the nature and vertues of the Spaw it ſelfe.

Agricola reckons up ſix ſorts of ſimple Mine-

Minerall waters; to wit, Salt, Nitrous, Aluminous, Atramentarious, Sulphureous, and Bituminous; this which we treat of is mixed or compound, partaking of severall of these together. *De re metal. 2. lib.*

Now there are severall wayes whereby water may imbibe the nature and vertue of a Minerall or Metall. *Water may imbibe the natute of Minerals*

First, by receiving its *vapour*, and thus let water stand some while in a brasse or iron skellet, and it will taste of brass or Iron, and the sooner if it be warm, when yet the skellet hath lost nothing of its substance, and that water would all evaporate into Air.

Secondly, when some of their *juyce* is dissolved in the water, and that is while the Minerals are but yet young and in *fieri*, or as Chymists speak *in solutis principiis*, for at that time their concrete juyces are dissoluble in water as *Libavius* saith. *In syntag. p. 221.*

Thirdly, another way is by *Corrosion of the substance* of the Minerals mentioned by *Galen*, and this is performed by the help of the concrete *juyces* we now mentioned dissolved in the water, *Lib. 1. de simpl. medicinae.*

which corrode and extract Mineral substances. And this commonly is done by such as have imbibed Vitriol at the first, for they doe thereby become hungry and corrosive, and so the fitter to take into them any other Mineral that lyes in their way; an example whereof we see in *aqua fortis*, which will corrode the substance of another Metal, and convert it into its own nature; the difference only lyes in *magis* and *minus*. The like we see in vegetable acide juyces, as vinegar, and juyce of Lemmons, which will corrode Iron, and cause a rustiness to grow upon it, which will soon wast its substance, at least make it more easie to dissolve.

Fourthly and lastly, by *confusion*, changing the substance of the Mineral into water; and this is when the Mineral is of such a nature, as that it is capable of being converted into water, as Salt and Nitre will both so perfectly turn into water (and Allom also although its not so fusible as the other) a little being put to them, as if they were nothing else. And this they will do the more

more quickly, if the water have imbibed a vitrioline juyce, but then take the water and evaporate it away, and the Minerals will be found remaining in the bottome. An example whereof we have in this our *Spaw water*, five quarts whereof being evaporated over the fire, when it is newly taken out of the Spring, there will be found in the bottome of the veſſel an ounce of an aſh-coloured brackiſh ſediment, as I ſaid before in the firſt Section, a conſiderable part whereof is Nitre, Allome, and Salt, the reſt the ſubſtance of Iron and Vitriol.

But becauſe I ſpake now of Mineral *juyces*, while the Minerals are but young and *in fieri*, its requiſite I ſay ſomething concerning their production.

Some have imagined that Minerals and Metals were created perfect at the firſt, ſeeing there appears not any ſeed of them manifeſtly, as there doth of animals and vegetables, and becauſe their ſubſtances are not ſo fluxible, but firm and permanent. But as they are ſubject to corruption in time, by rea-

Fallop. de met. c. 11.

Liba v. de nat. met. c. 12.

ſon

ſon of many impurities and differing parts in them, beſides other accidental decays, ſo they have need to be repaired and preſerved by generation, as Dr. *Jordan* obſerves.

Nat. B.

It appears in *Geneſis* that plants were not created perfect at firſt, but only in their ſeminaries: for in the 2. of *Gen.* 5. *Moſes* gives a reaſon why plants were not come forth of the earth; to wit, becauſe (as *Tremelius* tranſlates it) there had as yet neither any rain fallen nor any dew aſcended from the earth, whereby they might be produced: The like we may judge of Minerals, that they were not at firſt created perfect, but in their Seminaries alſo for the ſame reaſon, moiſture being as neceſſary for the production of Minerals within the earth as of vegetables above, and to this do conſent *Agricola* and Dr. *Jordan*.

De Ort. Subt. lib. 5. cap 1.

And therefore it hath been always a received maxime among Philoſophers, that Minerals and Metals are generated, and our daily experience confirms it. Our Salt Peter men, when they have extracted Salt Peter out of a floor

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of earth one year, within three or four years after, do find more generated there, and do work it over again. The like is obſerved of Alome and Copperas; And ſo of Iron, *Gaudentius Merula* reports of *Ilua* an Iſland in the *Adriatick Sea*, where Iron breeds as faſt as they work it, which is confirmed by *Agricola* and *Baccius*; and alſo by *Virgil* who ſaith of it.

Ilua inexhauſtis Chalybum generoſa metallis. Lib. 10. *Æneid.*

The like we ſee confirmed in our own Mines both of Iron and Lead, yea, and coal too, at leaſt in ſome places as I have heard the Miners affirm. Only the difference is, the plants are increaſed by an extenſion of the parts generated in all proportions, by the ingreſs of nouriſhment; and the Metals are augmented externally upon the ſuperficies, as Naturaliſts ſay *juxta poſitionem*, by ſuperaddition of new matter, concocted by the ſame vertue and ſpirits into the ſame *ſpecies*.

If any demand of me, which of theſe ways this water comes to be impregnated

How the Spaw hath imbibed the Minerals.

ted with the vertues of these Minerals; I answer, by them all, according to the nature and capacity of each Mineral. Of Vitriol it partakes by the first way eminently; to wit, by receiving its vapour, and so of Iron, yet so as it hath also something of the concrete juyces and substance of them both. From the vapours of Vitriol it hath its inky smell and acid taste, which after it hath been heated by the fire are gone at least in some degree, for it is not so strong as before. From the concrete juyces of Vitriol, Iron and Allome, I think it hath its colour, being something of a bright azure or sky colour, And that it wants not the substance of Iron is apparent, in that after it hath been boyled or put into oaken vessels for some while, there appears a reddish sand, inclining to yellow, which is nothing else but *mater ferri*, or rubrick, or as Dr. *French* calls it a Vitriol of Iron, and this is also discoverable by putting a little powder of Gall to it, as I hinted before. Lastly Nitre and Salt being apt to dissolve and turn to water, as also Allome, are

are mixed and confounded with it, as hath been already made out.

I now proceed to ſpeak ſomething concerning the nature of all theſe Minerals which I finde in the water.

Vitriol.

Vitriol is a name uſed by modern writers whereas the Ancients called it *Atramentum Sutorium*. *Serapio* and *Dioſcorides* reckon two ſorts of Vitriol which they call by an *Arabick* name *Zeg*; to wit, *Babylonian*, which being broken hath white ſpecks in it; And *Cyprian* which is of the colour of braſſe. But our later writers name three ſorts; to wit; *Romane-Vitriol*, or *Copperas*. Secondly, *Cyprian* which is that of blew colour; found alſo in Mines in *Germany*, partaking of the nature of braſſe, which they call *Calcanthum*; and a third ſort, which is found in *Liguria*, ſomewhat black, by which, Iron may be turned in to Braſſe or Copper, called *Colcotar*. *Vadianus* in his Commentaries upon *Pomponius Mela* ſaith, this ſort was found in *Poland*, not far from *Cracovia*, in which he ſays if Iron be infuſed, and ſo melted once and again, it turns it into

De temp. ſimp. c. 376. Lib. 5. Cap. 74.

Toll. in Stock. pr. c. 9

Lib. 3

Lib. 4. de ſimpl. med. facult.

into *Cyprian* braſs. *Galen* found them all together in a Cave at *Cyprus*.

Vitriol is eminently hot, and of a biting and aduſtive quality, and yet is alſo Stipick and aſtrictive, and therefore dryes up ſuperfluous humidity; and is uſed in diſeaſes of the eyes, being good in all moyſt diſeaſes; it ſtays bleeding, provokes vomit, kills all manner of worms and expels them; but when it is mixed with water it is much more moderate in all its qualities. This is the account given by *Galen*, *Dioſcorides*, *Serapio*, *Paulus*, *Oribaſius*, *Ætius*, *Aëtnarius*, *Ferneſius*, and others, as I could cite at large out of their writings.

Iron called by *Averrhoes Veſſaf* and *Nadid* by *Serapio*, is dry in the third degree: It is alſo Stiptick drying up the ſuperfluous humidities of the body, ſomewhat like to Vitriol; many preparations being made of it againſt the moyſt diſtempers of ſeveral parts, and particularly of the belly and womb, and ſtrengthens the ſeminal veſſels. It is alſo opening, and good againſt the obſtructions of the Liver and Spleen, and

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is commended against the hard swellings of them, and against the Dropsie, also it strengthens a relaxed and debilitated stomach, especialy if it arise from Choler: as *Galen*, *Paulus Ægineta*, *Oribasius*, *Averrhoes*, and *Serapio*, do witness, to whom especially, I refer the learned Reader. *Ser. de temp. simp. c. 393.*

Dioscorides will have it also to loose the belly, but especially he commends the flower or filings of brass to that purpose: Now *Iron* being joyned with *Vitriol* in this water, partakes of the nature of Brass, as I said before; and is therefore the more purging and opening, from which conjunction I think it is that most of our vitrioline waters in *England* do loosen the belly.

Allom is called by the *Arabians* Sceb. *Dioscorides* reckons up many sorts of it, *Galen* but three, to wit, σχιστὴ, στρογγύλη & ὑγρὰ & saith, they are all of gross parts and very Sriptick, abstersive, heating, and something corrosive; it hinders the generation of ulcers in the body, and stays womens fluxes, and is used in many sorts of Medicines to dry up superfluous *Allom.*

fluous humidity, good against fretting Ulcers and Impostumes of the Gums, Matrix and testicles, as say, *Galen*, *Oribasius*, *Paulus*, *Aetius*, *Serapio*, *Fernelius*, and others.

Nitre

Nitre or *Baurach* as the *Arabians* called it, is thought by some to be nothing more then *efflorescentia terræ*, or a certain fatness in the earth, tending to the production of vegetables, and that there are no Mines of it in the earth; of which opinion *Bellonius* seems to have bin, as also *Pliny*. But *Serapio* and *Dioscorides* make out better experiences, telling of Mines of *Nitre* in *Armenia* and *Arcadia*; and it is apparent, that there is *Nitre* in the cliffs neer unto this our Spring at *Scarbrough*, as was before evinced. I think *Bellonius* and *Pliny* meant rather *Aphronitrum*, or the spume of *Nitre*, then *Nitre* in self.

Lib 3. observat. cap 76. 77.

Lib. 3. N. M. c. x

Our best writers say there are two sorts of *Nitre*, *Natural* and *Artificial*; the Natural tends to a reddish colour as saith *Serapio*: *Galen* saith, there is also a white sort; of which sort it is plain this of ours is; But all agree in this, that

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it is of a drying, digeſtive, abſterſive and reſolving quality, cutting groſs and clammy humours very ſtrongly, its taſte is a mean betwixt ſalt and ſowre, inclining to bitter. It is commended for ſuch as have eaten poyſonous Muſhrums, and cures them preſently. Being mixed with water, *Dioſcorides* ſaith, it corrects the ſharpneſſe of Urine, and ulceration of the bladder cauſed by *Cantharides*.

It is wont alſo to be mixed in other Medicines when we would attenuate and deterge; its added to Cerats and Plaiſters in diſtempers of the Nerves, as the Palſie and Convulſion; and is good to be put into the bread of ſuch as are troubled with the Palſie of the tongue. If any require further ſatisfaction concerning the vertue of *Nitre*, let them conſult *Galen*, *Dioſcorides*, *P. Æginet a*, *Oribaſius*, *Ætius*, and *Serapio*

Salt or *Meleh* as the *Arabians* call it is of two ſorts, viz. *Foſſile* ſuch as is digged out of Mines; and *Marine* ſuch as is made of the Sea-water, or other brackiſh water, the former is of a more groſs, earthy and compact ſubſtance then the *Salt*

latter, yet they are both of one nature; of a deterſive, cleanſing, reſolving, purging quality, drying up ſuperfluous humours, and preſerving from putrefaction, kills all manner of worms, and being heated becomes bitter in taſte.

Many other vertues are reckoned up by *Galen*, *Serapio*, *Dioſcorides*, and others to be in Salt, to whom I will rather refer the learned Reader; then trouble him with a large recital at preſent, becauſe there is not much Salt in our Spring, yet ſome there is, which I think it receives from the Sea, rather then from any ſalt Mineral.

Object. Here perhaps it may be queryed by ſome, that ſince there is a great quantity of theſe Mineral-ſalts in this water, which are as ſo many parts of the water, *viz.* an ounce in five quarts, and three or four quarts is the uſual doſe which is drunk every morning; Whether it may be ſafe to have ſuch a proportion of them paſſing every day through the body, or no?

Sol. It is certain, that whatever medicinal quality theſe ſorts of waters have, it

it proceeds from the imbibition either of the ſoluble juyce, or at leaſt the vapors of ſome Minerals, through which the Springs do paſs; and the ſtronger they are impregnated, the more effectual they are. And I have ever obſerved, that in dry years when this Spring is the ſtrongeſt, and has the greateſt body of Minerals in it, it is moſt operative and ſuccesfull in performing Cures. And it is plain now after *forty years Tryal*, and the experience of *ſome thouſands*, that it is moſt ſafe and innocent; and of all the Mineral waters I have taſted, the moſt pleaſant to the Palate: Even all Ages and both Sexes (yea women with child) drink it without harm thus embodyed. Nay I ſuſpect, if the ſubſtance of the Mineral-ſalts were awanting, and it had nothing but the ſpirits of them, whether it would be half ſo uſeful as now it is, and would not need further helps to make it paſs then now it doth?

And therefore it is obſervable in our other waters at *Knaresbrough*, which have been alſo found very ſuccesful in ex-

cellent Cures, the *Sweet Spaw* that has no body of Mineral-ſalts at all in it; but has only imbibed the *vapours* or *ſpirits* of ſome Minerals, is rarely drunk alone, becauſe it paſſes not ſo well by Siege, but with ſome glaſſes of the *Sulphur-Well* to help its purging quality, according to the advice of Dr. *French*, as may be ſeen in his Book; and it is followed at this day by the Phyſicians that do frequent it; which *Sulphur-Well* has yet imbibed more then a double quantity of Minerals to this of ours, *viz.* two ounces in four quarts, and thoſe of another ſort too, which renders it both unpleaſant to the ſmell, and nothing ſo grateful to the Palate and ſtomack, as this.

P. 93. ſo P. 114.

Now though I can confidently affirm that this is a ſafe and innocent water, and that none in *Europe* doth better ſuit general indications; yet it cannot be expected by any rational man, that it ſhould cure all diſeaſes; or that it can be ſafe for every individual perſon to drink of it in ſuch quantity, without any manner of preparation to it, or regu-

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lar courſe of diet to be obſerved with it.

I have met with ſome who being ſickly, had more need to have kept their Chambers, and taken good Cordials, that have made long journeys to *Scarbrough*, even againſt the advice of their Phyſicians, purpoſely out of an averſeneſs to a Phyſical courſe, who though they drank not three quarts of water in a week, and perhaps twice as much wine, yet dying afterwards of their diſeaſes they brought with them, the waters have born the blame. Others alſo, for whom the waters have been moſt proper, having full bodies and very ſcorbutical, drinking without any advice had, or due preparation as was neceſſary, (peradventure to ſave ſome pettit charge) have fallen into the Gout; the water contracting heat for want of ſpeedy paſſage, being thrown by nature upon the weak joynts, have hence inferred, that theſe waters cauſe the Gout; when perhaps the next full meal, or large morning draught, or any ſort of Phyſick that had moved, and not removed the humours, might have done the like.

Another never had a fit of the Stone till drinking of theſe waters, (though few of his Family have eſcaped that diſeaſe) therefore the Spaw is ill for the Stone. Even juſt ſo, a Light is brought into a dark room, by which a Thief is diſcovered, therefore Light is ill for a Thief. Another drinks this or ſome other innocent water, and after many days of ſafe and profitable working, falls into a ſuperpurgation, (which yet is rarely ſeen from theſe waters) and will not be perſwaded to admit of any thing to ſtay it till he dies; Where is the fault? I would not have mentioned theſe, but that I know there are not wanting thoſe that (*out of deſign*) do ſeverely impoſe theſe as from ſome fault in the water, endeavouring to make a bolt or a ſhaft of them, to wound the reputation of this famous Spring. I ſhall by and by make a brief Rehearſal of ſome Cures done by it on Perſons that cannot be biaſſed, and ſo leave it to the *Ingenuous Reader* to pick out what his impartial *Reaſon* dictates.

Turpe eſſet digito monſtrari et dicier Hic eſt.

Object. But here again it may be asked, Whether

ther might not the Mineral Salts that are extracted out of this water, be as effectual to all intents and purpoſes, either given by themſelves, or mixed with other Spring water, and ſave the labour of many, who otherwiſe muſt make long journeys to *Scarbrough*?

I anſwer, I have often intermixed a ſmall proportion of them with other Medicines for ſeveral intentions, and *Sol.* with good ſucceſs. But ſince theſe Salts cannot be extracted without a long, if not a vehement fire, which not only conſumes their vehicle the water, but alſo exhales their volatile parts, which ſhould help their nimble and ſpeedy paſſage through the bowels, and imparts alſo another quality and degree of heat and dryneſs to them, which they had not before, I ſuſpect they may be too ſharp to be taken inwardly in ſuch quantity, as when they were diffuſed without artificial alteration in their proper natural vehicle. Nor will they being once ſeparated, unite with another water, but lie at the bottom undiſſolved; as upon tryal I have ſometimes

obſerved, beſides the loſs of their volatile parts would render them of leſs efficacy.

There is no doubt, but every thing which we uſe to take inwardly either for Medicine or Diet, hath its ſeveral parts which may be ſeparated by fire, as the *Phlegma*, *Spirits*, *Balſamick oyl*, *Salts*, and *Caput mortuum*; and if the vertue of the Simples can be preſerved intire in any of the parts, or another quality made to reſult out of them, which was not before in them, its commendable and neat, but elſe its to little purpoſe, ſave for an Artiſt to ſhew his Art, and were better left to natural heat to extract their vertue. But as for other things whoſe vehicles are not ſo ſafe for inward uſe, ſuch as are Metals, ſome Minerals, and divers Vegetables; its of ſingular Ornament to Art to extract out of them ſome parts, as may render them fit for inward adminiſtration: And I know that out of theſe Mineral-ſalts which are ſeparated from this water, ſome very uſeful preparations might be made, to be ſafely joyned with other vehicles for good purpoſe.

It

It ſufficeth to have ſaid ſomwhat concerning the nature of theſe Minerals ſeverally; doubtleſs there muſt ſome qualities ariſe from their mixture, eſpecially being here but *in ſolutis principiis*, & that with water, which was not before in any one particular, I ſhall now therefore haſten to Treat concerning the nature & effects of this moſt excellent compound Mineral water, and then ſay ſomething concerning preparation to it, and right ordering of the body in drinking, and ſo conclude.

SECT. XIII.

THe *Spaw water* according to its manifeſt qualities is cold and moiſt, and being drunk doth immediatly cool and moiſten the body, and quench thirſt, having thoſe qualities which ſimple water hath, as I have reckoned up at large in the ſecond Section, and may indifferently be uſed for it. Although having imbibed the aforeſaid Minerals of *Vitriol*, *Iron*, *Alom*, *Nitre* and *Salt*, it is impregnated with the qualities and natures *Of the Spaw.*

natures of the ſaid Minerals, and conſequently is hot and dry in operation, being found by due and daily uſe thereof, to correct cold and moiſt bodies, and cure ſuch diſeaſes as proceed from the exceſs of cold and moiſture.

Nor let any ſtartle at this Aſſertion, that I affirm this *Spaw* water to be cold and moiſt, and alſo hot and dry, which *Its Nature* are contrary qualities, ſince it is cold and moiſt actually in the inſtantaneous uſe of it, but doth heat and dry virtually, and in proceſs of time. Who knows not that wine, though it be cold and moiſt actually, yet is potentially hot and dry, the ordinary uſe whereof doth heat and dry the body.

Now as all bodies incline to a predominancy of theſe four qualities, and moſt diſeaſes conſiſt in the exceſs of ſome one or more of them, each quality ſo exceeding is tempered by its contrary in the water, ſo as nature, which is ever ſollicitous for its own preſervation, cloſes with thoſe qualities in the water (as alſo in all other remedies) which correct its own exceſs, and arms it ſelf unleſs

(unleſs it be very feeble) againſt thoſe other qualities that might increaſe its malady, and hence it is, as Dr. *French* well obſerves, that a diſtemper will rather be altered by its contrary, then increaſed by its like.

But becauſe theſe four firſt qualities are found in this water but in a remiſs degree, the heat and dryneſs being ſo corrected with cold and moiſture, and the contrary, that a forcible operation in reſpect of any of them cannot be expected from it, I think fitter means may be found out for thoſe intentions: As if a man would only cool and moyſten, it may better be done with ſimple water which has no potential heat or dryneſs in it, and may be found in every village; or if he would only heat and dry up humors, it may better be performed by other Medicines that are more eminently hot and dry, then by this cold & moyſt water, ſo as no man need go to *Scarbrough* for theſe intentions. I therefore paſs on to the other qualities of this water, in which it doth eminently excell, through its partici-

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pation of the aforesaid Minerals.

Its operation. It is of thin parts piercing into the most narrow and secret passages of the body, & is excellent in opening obstructions, which are the causes of most diseases. It doth attenuate, cut and dissolve viscous, lentous, and clammy flegm in the stomack, bowels, mesentery, reins and bladder, and is also cleansing and deterging, casting them forth both by siege and urine, as it finds them by their position most to encline: For such humours as are *in primis viis* in the bowels, it purges out by siege, and such as lye in the mesentery veins, or *venæ lacteæ*, *portæ*, liver, reins or bladder, it cleanses by urine; and both ways so plentifully, as if all the humours went but one way, for it purges so well as if it would leave nothing to pass by urine, and yet passes so plentifully by the bladder, as if it found no vent by stool; performing these two operations the more plentifully, by reason of the quantity that is drunk. And of such working it doth very rarely fail, or scarce ever, unless in exceedingly

ingly conſtipated bodies; and this it doth without any griping at all, caſting forth plentifully both it ſelf and the exctementitious humours, which I have often experimented both in my ſelf and others.

I drank one morning three quarts of the water, *facta prius retrogradatione matutinâ pro ſolito*, having alſo weighed my ſelf before I drank, that I might diſcern what alteration it would make in my weight. I drank a pint every half hour, walking about betwixt every draught and another, till I had taken all the three quarts. After I had taken three pints it began to work, and ſo continued an evacuation both ways, *viz.* ſeven times by ſiege liberally within eight hours. I alſo meaſured the quantity of urine which I had kept by it ſelf, ſo as within the ſpace of five hours, I had made a pottle of Urine, within leſs then half a gill, as clear as the *Spaw-Water* it ſelf, having neither ſmel nor taſte like Urine. I took the Urine and evaporated it all away, that I might try whether it had yet remaining *Aſſiſtants.*

ing in it any of the substance of the Minerals, but it afforded nothing but a filthy slimy Sediment of a sandy colour.

Hence it may appear how diuretick this water is, when two third parts or near hand, should in so short a space pass through those secret crannyes of nature by Urine, and yet at the same time work by siege so freely, herein exceeding, if I mistake not, most of the waters of *Europe*, (not excepting the *Germane Spaws*) some of which pass very well and plentifully by siege, others of them by Urine, but scarce any so well both wayes, as *I* have from the testimony of divers persons of quality that have tryed them.

Having thus observed the through operation of the water both ways for that one day, *I* weighed my self again the next morning as before, and *I* had lost two pound and an half of my weight: now *I* think the humours being rarified by the water, some of them were evaporated by insensible transpiration. And although *I* was in my ordinary

state

ſtate of health when *I* drank this one doſe, yet *I* found after it a better agility of body, and alacrity of ſpirit then before. *I* have perſwaded others to make tryal alſo as *I* did, and it hath in ſome fluid bodies wrought more plentifully both ways then it did with me.

Now this water doth not only thus throughly cleanſe the body by ſiege and Urine in the parts through which it paſſeth, but alſo draws from diſtant parts, as the Head, Joints and Breaſt, and helps to the curing of their diſtempers: Moreover to this evacuating is alſo joyned a corroborating or ſtrengthening quality, whereby it fortifies the parts, and ſo arms nature with new ſtrength to the preventing of Relapſes.

I might, if it were requiſite, produce the Teſtimony of many hundred witneſſes, who have experienced the Truth of what *I* ſay. But it being againſt my *Genius*, and alſo my preſent reſolution, to make long Diſcourſes to the increaſing of this Volume, *I* ſhall only offer to the *Ingenuous Reader* the experience of a few, ſome of them *Perſons of Honour*, and

and all of them of conſiderable *Quality* and *Reputation*, *yet living*, who do willingly give their Teſtimony, which *I* have ſet down in each mans own expreſſions, concerning the ſuccesful Cures they have experienced in their ſeveral caſes, by drinking this water at *Scarbrough*.

I ſhall begin with Sir *John Anderſon*, (whom *I* had occaſion to mention before) whoſe Letter to me upon notice of the coming forth of this ſecond Edition, with an Hiſtorical Relation of Cures, was as follows, being very comprehenſive, & ſignificant to our preſent purpoſe.

SIR,

UPon your Requeſt to give you an Account of the Effects I found of Scarbrough Spaw, *I preſent you with this as a true Narrative of what I have obſerved*: *In* Anno 1661. *finding my ſelf very much inclining to the* Scurvey, (*having moſt of the Symptomes attending that diſeaſe*) *I came to* Scarbrough, *and muſt confeſs, that after a fortnights drinking*

ing of the waters, I found both the pains of my knees and ſhortwindednes wholly gone, and thoſe other impediments that are concomitants of that diſtemper. Being thus encouraged, at the convenient time of the next year I repaired thither again, and very unexpectedly I was there taken with a fit of the Gowt, under which malady I had formerly ſuffered, but after I had drunk the waters about a week, I was freed from all my pain, and I thank God (excepting ſome ſmall remembrances as heat in that joynt of my toe) I never ſince had any thing of pain worth taking notice of. In 1663 I found my blood extreamly hot, and ſuch pricking in my hands and feet, and continuall bleeding at the noſe, that I feared an extraordinary diſtemper, which after uſing of the waters I was clearly freed from. In the year 1664 I was prevented by extraordinary occaſions, and could not come to the Spaw, and moſt part of that winter, and the ſucceeding Spring, I was much afflicted with an extraordinary heat in my bowels, and Short-windedneſs, and pain in my knees, which by the bleſſing of God, and the goodneſs of

the waters, joyned with your advice and and aſſiſtance in uſing them, I find my ſelf quitted of. And this obſervation I have made this year of my own uſing them, that after I had drunk three dayes (the waters having fully anſwered my expectation in all particulars) I reſolved one night to content my ſelf with a very ſlender ſupper, and the next morning I obſerved that I made plentiful ſtore of urine as uſually before I drank the waters, after which I drank four quarts of water, and reſolved to faſt untill they had fully compleated their operation, which (as I conceive) ended about three in the afternoon; I ſtill kept faſting to ſee if they would work longer, which in ſome ſmall meaſure they did till five, but more by urine then ſiege: After which I meaſured the quantity that had come from me, in which I was as exact, as I was in the taking the water it ſelf, and when I had compared what had paſſed through with the quantity that I drank, I found the four quarts increaſed to five, and very near a pint, which could not be increaſed by any thing I took, for untill five I had faſted from

all

all things, and then took but a gill of worm-wood wine, which was all that could help to make the addition, excepting the humours of the body which were plentifully caſt out with the waters. This from

Sir, your very affectionate friend
J. Anderſon.

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Diſeaſes of the head and nerves

It is found to be good in ſeveral *diſeaſes of the Head*, eſpecially when they proceed from ſympathy with the ſtomack or lower belly, as oft times they do in Cacochymick conſtitutions. As alſo in the *Diſeaſes of the Nerves*, as the *Convulſion*, eſpecially when it is cauſed by ſharp and bilious humours, which do vellicate the Tunicles of the ſtomack, or the beginning of the nerves; or from Worms, as is ordinary in the younger ſort. Likewiſe againſt the *Palſy*, eſpecially that which comes from, or is accompanied with the *Scurvy*, which we therefore call *Paralyſis Scorbutica*, and is obſerved by our modern Writers, occurring dayly in our pra-

ſtiſe, although not mentioned by the Princes in Phyſick, or the ancient Writers. Of theſe I ſhall give ſome inſtances.

Megrim. Mr. *Chriſtopher Farmery* of *Northrop* in *Lincolnſhire*, was much troubled with the *Megrim*, ſo as upon any ſudden motion, or heating of his body, he was ready to fall, unleſs he could lay hold on ſomething, or lye down, found a Cure by theſe waters; and for prevention of the ſaid Symptomes, he hath continued to viſit them ſix years together.

Scorbutical Palsy. Alderman *Edward Elwick* of *York*, Apothecary, was taken with a Fit of the *Palſy* upon the left ſide from head to foot, with ſome torſions on that ſide of his face, nevertheleſs his Underſtanding was all the while perfect. After the *Palſy* was cured by the help of Phyſical Remedies, there remained ſtill a *Dizzineſs in his head*, cold *ſweats* all over, eſpecially about his face and neck by times, and then his *Pulſe*

was

was also wont to *intermit*. He could scarce turn his head aside unless he turned his whole body, which were judged to be *Scorbutical Symptomes*. He went to *Scarbrough* and drank about ten days, and at his return he found himself better in all the aforesaid Symptomes, and was able to turn his head as at other times. Notwithstanding finding afterwards some returns of his *Dizziness*, with *faintness* for two or three years, upon the use of the waters he ever found good success, and is now (praised be God) in *very good health*.

Another.

William Thornton of *Newton*, Yorkshire Esq; in his journey from *York* to his own house in Winter, was suddenly taken with a *Scorbutical Palsy*, to the *loss* of the use of all his *Limbs*, and also his *Sight*, joyned also with *Convulsions*. I was called to him the third day, and it pleased God so to bless my endeavours, as that within less then a week, he could both *Walk*, *Handle* and *See*, although not with that strength and vigour as before, which yet every day grew

better on his perſiſting in the uſe of Remedies, Notwithſtanding finding ſometimes a *weakneſs in his nerves*, eſpecially if he ſtepped forth in cold weather, and fearing a Relapſe, I adviſed him at the ſeaſon of the year to drink the waters, (having duly prepared him) which he did continue to do for fourteen dayes, *in Anno* 1666. and then after a moneths reſt to drink again, which was done with eminent good ſucceſs, his ſtrength being increaſed, and his ſpirits revived, ſo as he doth now, through Gods mercy, enjoy again his perfect health.

Epilepsy I have ſeen excellent ſucceſs in one that was Epileptick, whoſe Fits proceeded from an hot vapour, as he apprehended, that roſe from the Hypochondres, and darted into his head and joynts like a Flaſh of Lightning, cauſiug Convulſive motions, eſpecially in his right Elbow, which had reſiſted all remedies that could be uſed before.

I might inſtance more of this nature, but that I ſtudy brevity, and ſhall take care to obſerve it in the enumeration of the

the Cures that follow, ſince by theſe the *judicious Reader*, eſpecially thoſe of my own Faculty, may eaſily judge what may be expected from theſe waters. Only I muſt give this caution in reference to diſeaſes of the Head; that if the Head be *idiopathick*, to wit, if the malady, as the *Palſy*, *Epilepſie*, *Vertigo*, &c. be radically in the head; or otherwiſe though the Malady ariſe from Sympathy, if it be in the beginning of the Paroxyſme, or in its ſtate, while the animal ſpirits are dull, and the morbifick humour fixed, in ſuch caſes the water cannot be proper, but more forcible Medicines are requiſite, as alſo ſpecificks. But if the cauſe of the Diſtemper be from the lower parts, and due Remedies have been premiſed, ſo as the Diſeaſe is in its declination, as in the caſes already ſtated, then the waters have a ſingular vertue, and tend to perfect the Cure: provided alſo that there be an interpoſition of other Medicines both Cathartick and Specificks, as the caſe may require, and the Patient be regular in all things as he ought. *Caution*

Diseases of the breast.

It cleanses the *breast* of flegmatick humours, and is good against *Difficulty of Breathing*, provided it be not accompanied with an ulcer in the lungs. I have known many that have not been able at their first coming, to walk a quarter of a mile upon the plain ground for want of breath, that after a few days drinking, have been able to walk up to the Castle hill without a rest.

Shortness of breath.

It helps the *Asthma*, if the Patient labour not under the incurable disease of old age, or an exceeding feeble and cold Distemper of the bowels.

Asthma.

Alderman *Humphrey Duncalf* of *Hull* had been long and sore afflicted with the *Asthma*, and was curedby drinking of it in a few dayes.

Great debility.

Mrs *Mary Byron* of *Roosby Yorkshire* had been three or four years exceedingly troubled with a *stopping at her breast*, in so much as for a month or five weeks together sometimes, she could not lye down in her bed, but was bolstered up with pillowes; she was brought also

to that *exceſſive weakneſs*, that ſhe could ſcarce go over the houſe when ſhe was at the beſt, and her fleſh was *quite conſumed*, being almoſt nothing but skin and bone; ſhe could never eat any thing, but *caſt it up again with coughing*; nor could ſhe drink at any time, but preſently ſhe was ſcarce able to ſpeak for *want of breath*. She came to theſe waters in 1663, and drank about eight or ten dayes, returning home with perfect health, and has ſo continued to this day, ſince when ſhe hath had a child.

I confeſs at her firſt coming (*fearing a Conſumption*) I could give her but little encouragement, but ſhe having a longing deſire to drink, I yielded to a tryal, being reſolved to watch carefully over her, for the prevention of ill Symptomes, but none enſued, and I could not but much wonder at the ſucceſs.

Mrs. *Mary Bateman* of *York* had been much troubled with *Rhumes*, which had ſwelled up her face and eyes, and reſiſted all remedies, found very much benefit by the uſe of this water, more *Rhumes.*

then

then all other methods that had been preſcribed for her, upon account whereof ſhe has been an annual viſiter of it theſe twelve years.

This perhaps may ſeem ſtrange that a *Catarrhe* ſhould be cured by water, but if the nature of the Minerals which it has imbibed be duly conſidered, it will be found reaſonable enough. Although indeed I have known ſome that have complained more of *Rhume* after it then formerly, ſo as it ſeems to be doubtful whether in ordinary *Catarrhes* it be proper or no; If ſuch conſtitutions do labour under ſome other malady to which the water is more appropriate, and is found neceſſary, care muſt be taken that their dyet be more drying, and other things uſed with the waters which may prevent that ſymptome.

Gowt. Mr. *George Weſtby* of *Gilthwait Yorkſhire* was many years ſore afflicted with the *Gowt*, which had almoſt taken away the uſe of his left hand, ſo as he could not hold his bridle, and the colour of it was altered unto a blackneſs: after

after four or five dayes drinking of the waters, its *natural colour was revived*, and ſtrength reſtored, ſo as he had afterwards the perfect uſe of it.

I have known ſeveral others who have found benefit by them in the *Gowt*, whom I forbear to mention; only I will take leave to name Mr. *Giles Fleming* late Miniſter of *Gautby Lincolnſhire* though dead (for reaſons well known to ſome) He was ſo lame with the *Gowt*, that he could ſcarce move with his Crutches; and in 5. or 6. dayes he was ſo recovered by the waters, that he was able to walk nimbly about the room without his Crutches. This is well known to ſeveral perſons of Quality yet living, who have often heard him acknowledge it, and further ſay, that if he had met with this remedy, while he had been young, and before the parts were too much enfeebled by frequent fits, he thought he might have prevented a great deal of miſery which he had ſuffered in the *Gowt*. He lived between two and three years after, and then being aged ſixty *Another*

ſixty four he fell into the *Strangury* and dyed.

And indeed I think he was much in the right, it being very proper to correct the acrimony of the humours, and fortify the nervous parts, and ſo cure the Gowt, as I my ſelf have experienced in my own body, having had ſome Fits of it: only to this I adde frequent bathing in the Sea-water cold, in Summer time, when my occaſions call me to *Scarbrough*, after which I take a Sweat in a warm bed; and I think if bathing in cold water were more in uſe, we ſhould not ſee young men ſo much afflicted with the Gowt.

Diſeaſes of the ſtomach

It is of ſingular efficacy againſt many *diſeaſes of the ſtomach*, for it both ſharpens the Appetite, and helps concoction, and cures vomiting, by ſtrengthening the retentive Faculty exceedingly,, whereof I could bring a cloud of Witneſſes.

Great debility of ſtomach.

Mr. *Humphrey Birch* of *London* had been long troubled with *loſs of Appetite*, and *debility of Concoction*, the retentive faculty

faculty of the ſtomach being ſo depraved alſo, as that he did conſtantly *caſt up his meat*. This being the ſecond year of his appearance at *Scarbrough*, he acknowledges he has found a perfect cure, being able to eat and concoct any ſort of meat.

The ſame was the caſe of Maſter *Roger Meynell of Dalton-Ryal*, York- *Another.* ſhire, for above three years together, which had exceedingly abated his ſtrength, and reſiſted all endeavours of Phyſicians, who was perfectly cured after one weeks drinking of the waters, and for prevention he has not failed for ſeveral years to viſit them.

Mathew Alured Eſq. of *Beverley*, *Heart-bu* Yorkſhire, was many years ſore afflicted with the *Heart-burn*, which tormented him day and night, notwithſtanding much means uſed for cure, found benefit here, on which account he yearly frequents them.

Mr. *William Linſtead* of *Hull* had *Surfet.* got

got a *Surfet*, which brought on an exceſſive *vomiting* and *purging* even to fourſcore times: all his body over he broke out into red pimples, as if it had been the ſmall pox. Upon his drinking of the Waters immediately all the Symptomes abated, and his ſtrength and ſtomach encreaſed dayly, and in four or five dayes was reſtored to perfect health.

Pains of the ſtomach

I have ſeen excellent ſucceſs in the uſe hereof againſt *inveterate griping pains at the ſtomach.*

Grievous Symptoms.

The *Right Honourable James Earl of Suffolk* had been for the ſpace of thirteen years troubled with a moſt *grievous pain at the ſtomach*, which uſually ceazed on Him at meals, eſpecially if he did eat fleſh, ſo as *His Lordſhip* was forced to give over, though ſometimes at two or three bits of meat, and thus it would hold Him for ſeveral hours, cauſing a great *diſtention* and *hardneſs* upon the region of the ſtomach, with *torſions* on the right ſide, ſo as it made *His very Ribs* on that ſide to *bend*. *His Lordſhips* beſt eaſe was to ſit low, and thruſt his thumb with

with all his force upon his ſtomach. *His Lordſhip* had ſought for cure both in *England* and *France* of the moſt eminent Phyſicians he could hear of, but found none, the malady reſiſting all means that could be uſed. In 1665. *His Lordſhip* came to theſe waters, and drank about three weeks, where I had the honour to attend *His Lordſhip*, and to obſerve the ſaid Symptomes. After a few dayes the fits leſſened by degrees, that *His Lordſhip* could better eat, and concoct his meat with little pain. I gave *His Lordſhip* ſome grounds of hope, that after he was ſettled at home from the waters & his journey, He might find a perfect recovery, which through the mercy of God did accordingly ſucceed, ſo as *His Lordſhip* has ſcarce any footſteps of his former malady, but can eat any ſort of meat without pain.

Madame *Elizabeth Strickland* of *Boyton York-ſhire* after the ſmall poxe fell into a fever, after that relapſed into a *tertian Ague*, which terminated in the *Jaundice*, after which followed a moſt

Such like.

moſt grievous *griping pain at the ſtomach and back*, which ceazed on her by fits, ſometimes a month or two betwixt one and another, accompanied with a *vomiting* up of whatſoever ſhe took, and after every fit her whole body would be as *yellow as Gold*. She had alſo ſuch a fulneſs and *tenſion at the ſtomach* and upon the region of the *Liver*, that ſhe could not endure it to be touched, nor could lye upon the right ſide. It had reſiſted all rational means that could be uſed, till the ſeaſon of the year coming on, I adviſed her *Ladyſhip* to drink theſe waters, and fitted her with medicines both preparative and concomitant, which ſhe did for fourteen dayes with very much beneſit, *being then almoſt half gone with child*. Notwithſtanding after ſome months the fits returned as before, ſo as the next Summer ſhe drank the waters again, (though at *Boynton* twelve miles from *Scarbrough*). She was again ſomewhat better, but the winter following had moſt violent returns of the fits. The next year I adviſed her to drink them at the *Fountain* and to ſtay longer,

longer, which ſhe did for three weeks, and then after a months intermiſſion, to ſend for freſh water every day, and drink ten dayes at home, her *Ladyſhip being then young with child* yet without any harm upon that account. Since which God be thanked ſhe hath had *no more fits* (it being now almoſt two years ago,) but is as healthful as in all her life before.

I could recite ſeveral other Perſons of Quality, that had been ſore afflicted with ſuch grinding pains at ſtomach as theſe that were of long duration, and reſiſted other remedies, who have gone away rejoycing for their perfect freedome.

Old obſtructions of the belly.

It is ſingular good in opening even the old and *inveterate obſtructions of the Meſentery Liver and Spleen*, and prevents a *Dropſy*, or cures it, if be taken in time, before the Liver be too much weakened. It prevents and tends much to cure the *Schirrus* of theſe parts, if it be taken in the begining, before it be confirmed; and corroborates the natural Faculty of them, and corrects their

intemperate heat.

Dropſy. Mr. *Thomas Weslid* of *Grimsby Lincolnſhire* was taken with an *extream pain in his belly*, which held him for many Months together, ſo as he could never ſay he was an hour free, which took away his ſleep. He was alſo ſo *ſwelled in his belly*, as that he could not walk twenty yards together without a reſt, and great *difficulty of breathing* and continual ſweating; his *appetite* to meat was *gone*, ſo as he was deſpaired of by his Phyſicians, who ſuſpected a *Dropſy*. He came to the waters, though with great difficulty in his journey, becauſe of the weight of his belly, and drank neer three weeks, and found an abatement in all the aforeſaid Symptomes; the *ſecond year* perfected the cure. This is now the *third year* of his drinking the waters, which he does continue to prevent a relapſe, being now as healthful as in all his life before.

Caution. Here I muſt needs advertiſe, that in *inveterate dropſyes* or *Schirrus*'s of theſe parts, no benefit can be expected; nor yet in the beginning without due pre-

pre-

paration, and great care had to intermixe proper ſpecificks, which may help to fortify the natural parts, and ſometimes the interpoſition of hydrogogues as need ſhall be. I have known ſome Perſons of quality come in theſe caſes, whom I durſt not permit to take the waters, but have commended them to other Methods.

It purifies the blood, and cures the *Scurvy* even ſuch as hath been tainted with it in a high degree; a large experience whereof I had in the late wars, when the Garriſon that was kept by Sir *Hugh Cholmley* in the Caſtle, after a few weeks ſiege, whether from the air of the Sea, or a bad diet, or want of exerciſe, were moſt of them fallen into the *Scurvy*, eſpecially the *Country Gentlemen* who had fled in thither, who were miſerably troubled with it; as many of them as drank of the Spaw water, were perfectly and ſpeedily cured, which ſome of them uſed without any other means. *Scurvy & Cachexy.*

I could bring many inſtances of Perſons of quality, that have been highly

tainted with all the ſymptomes that attend the *Scurvy* and *Cachexy* and were upon the very brink of the *Dropſy*, having their leggs ſwelled *&c.* who have found perfect cures, on which account they are conſtant frequenters of it: But I ſhall forbear leaſt I encreaſe the volume too much, eſpecially ſince Sir *John Anderſon* has ſaved me the labour, and nothing is more notorious.

Caution. Onely here I muſt adviſe that it be drunk at the *Fountain*, for if it be carryed abroad at great diſtance, ſo as it begins to putrefie, it looſes both its volatile parts, wherein eſpecially conſiſts the aperient quality, as alſo ſome of the ſubſtance of the minerals, (as I made out in the firſt Section) and taints the the blood, and ſpoiles the complexion and debilitates the ſtomach, as all corrupt waters doe. A thing obſerved by a worthy Knight in *Lincolnſhire, viz.* Sir *Draynor Maſſingberd*, who with his Lady at *Ormsby*, drinking it at their own home for the *Scurvy*, about ſixty miles from the *Fountain*, found their complexions become yellow, as if it had been

been the Jaundice, which they recovered not till the *Christmas* following; and the next year comming to *Scarbrough* they admired at the difference between the water at the *Fountain*, and when it was carryed to their own house, both in taste and effects.

I have often known *inveterate Quartanes* cured by it; and other sorts of *Agues* also, which have long resisted medicine have been conquered by the use hereof in a short time, but it must be drunk only upon their dayes of intermission. It is very good to purge away the *Reliques* of the *small Pox*, *Agues* and other diseases, and consequently to prevent relapses, which are wont to ensue through a new fermentation of their matter. *Rebellious Agues.*

Mr. *George Blackaller* Rector of *Etton York-shire* had been troubled with a *double quartane* for the space of nine moneths, together with some symptomes of the *Scurvy*, which appeared in red spots in all the musculous parts of the body. He went to *Scarbrough*, and *Double Quartane.*

at the very beginning his fits leſſened, and ſtaying three weeks he found a perfect cure, haing not had the leaſt ſymptome of either theſe *five years.*

I could weary the Reader with inſtances of this kind, but that I ſtudy to avoid prolixity.

Hypochondriack maladies.

It is a moſt ſoveraign remedy againſt *Hypochondriack Melancholy*, ſuppreſſing the vapours which fly up to the head, and cheering the heart; In this I ſhall be a little more copious, becauſe of the great variety of Symptomes I have obſerved in thoſe, that have frequented the waters for cure in this diſeaſe.

An Inſtance

The *Right Honourable* the *Lord Roos* had been long troubled with *Hypochondriack wind*, which took away both his appetite and digeſtion, and cauſed an eminent decay of his ſpirits and ſtrength and ſo filled his head with fumes, that He was often taken with dizzynes and melancholick fancyes. After long Methods of Phyſick preſcribed for *His Lordſhip* by ſeveral learned Phyſicians, (wherein though He ever found much good

good, yet his diſtemper was frequently returning) *His Lordſhip* came to theſe waters, wherein He found ſo much benefit in all the reſpects aforeſaid, that He now injoyes a conſtant ſtate of health, and this being the third year, wherein *His Lordſhip* viſits *Scarbrough*, He is become much more lively and fleſhy then formerly, and finds good encouragement to continue His annual viſits, and to *Honour* theſe waters with *His Lordſhips* good company.

Mr. *Thomas Birkbeck* of *Sheffield* *Another.* *Yorkſhire*, was a long time both in his own apprehenſion and others, in a *languiſhing condition* in this diſeaſe, being full of fears and fancyes; He was perfectly cured with it, and now for many years is become an healthful and cheerfull man.

Mr. *George Smith* of *Berwick* upon *Another.* *Tweed* Practitioner in Phyſick fell into an extream heat and *ſharpnes of Urine*, with a *continual dyſurie*, after which, did immediately ſucceed moſt grievous

Symptomes of *Hypochondriack Melancholy*, *viz.* dizzynes in his head, dimneſs of ſight, difficulty of breathing, oppreſſion at ſtomach, and indigeſtion of meat, being voided raw, which himſelfe with others ſufficiently Learned did in vain labour to remove, ſo as he was forced to keep his Chamber almoſt ſix moneths together, even deſpairing of a recovery. He came to theſe waters in 1664 and drank three weeks, and returned home in good health and cheerfulnes of ſpirit. In 65 and 66 he came again, and reſolves while God ſpares life to continue his annual viſits, notwithſtanding the diſtance, being above 120 miles.

Another. After the ſame manner was Mrs. *Elizabeth Smith* of *Scremerſton* in the *Biſhopriek of Durham* troubled for a long time, which had changed her complexion, and made her *exceeding ſwarthy*; with three weeks drinking ſhe found a perfect recovery. It happened alſo, that while ſhe was with her Huſband at *Scarbrough*, ſhe conceived with child,

child, when yet as to her own expectation, she was past hopes of any more children, having never conceived for above five years before.

Another.

Mr. *Robert Lever* Minister of *Bolam* in *Northumberland* was exceedingly troubled with *Hypochondriack Melancholy*, for the space of eight years, joyned with frequent extention and convulsion of the nerves, which when the fit was gone off, left him so feeble, that he was not able to walk, till he had gotten some rest. He was often dizzy in his head which so clouded his understanding, that he became uncapable sometimes, for a quarter of a year together, of discharging the dutyes of his Office. He was several times at the *other Spaw in Yorkshire*, where though he found some benefit, yet the Symptomes returned. In 1663 he came hither, and drank a whole week, yet without any benefit, till I was called to see the fit, wherein he seemed to be *almost distracted*. I judged it requisite to prescribe some other helps proper for

for the caſe for two or three dayes, and furniſhed him with ſome *Specifick*s to be uſed with the waters, and ſet him on again, adviſing him to drink ten dayes more. After three dayes he found eminent degrees of a recovery, all the Symptomes abating, and departed from the waters very healthful and cheerful, and praiſed be *Almighty God* continues ſo to this day.

Another. Mrs. *Elizabeth Newcome* of *Manchester Lancaſhire* was for eight or nine years together ſore afflicted with this malady, joyned with *extream oppreſſion* at the ſtomach and back, with flitting heats, as if ſhe had been in a violent fever, perpetual coſtivenes, and dizzynes of the head. Before the violence of the hot fit, ſhe found a ſharp *ſtinging in the wreſt* of her right arm, as if *a penknife* were thruſt into it; and when the fit was upon her, ſhe would fall into exceeding *great frights* from any the leaſt noyſe, as the crowing of a Cock, or the barking of a Dog; and when it was gone off, ſhe would be as *ſore* as if ſhe were

were beaten: It had reſiſted all medicines, till comming to theſe waters ſhe found good ſucceſs.

It expels *all ſorts of Wormes*, and the matter of which they are bred. *Worms.*

Richard Legard Eſquire had been many years troubled with ſmall wormes, which we call *Aſcarides*, for which he had taken good advice and uſed ſeveral remedies, yet never found any ſo ſucceſsful as theſe waters, which brought from him, to his beſt judgement, above *five hundred* in a day, and in a few dayes quit him both of the wormes, and the matter that bred them. *Aſcarides.*

Mr. *George Watſon* of *Throſtenby* neer *Scarbrough* was grievouſly afflicted with *melancholick fumes*, which exceedingly clouded his underſtanding, and poſſeſſed him with fears and fancies, taking away his ſleep for many weeks together, ſo as he was become a meer *Sceleton*, and ſo feeble that he was *not able to walk*, but was carryed about in *armes*, during which time he had nevertheleſs *A rare caſe.*

theleſs an *incredible appetite*, accompanyed with a gnawing pain at his Stomach, the cauſe of which diſtemper was not eaſily diſcerned, till after ſome time he began to void a ſort of flat *wormes* about an inch long, empty as if they had been nothing but a skin. Applying himſelf to the waters, he voided ſometimes 30. or 40. of a day, and in a little time found a perfect cure, all Symptomes abating, and his appetite returning to its regular courſe.

Fluxes. It helps ſuch as are ſubject to frequent *fluxes of the belly*, taking away the lubricity of the Guts which is uſually the cauſe of them, and ſtrengthens the bowels.

Heat of urine. It is peculiar againſt the *Inflammation and Ulcer of the Reins*, correcting the heat and *ſharpnes of Urine*; diſſolveth the *Stone in the Kidneys*, expelling it in gravel, and the mucous matter of which it is bred, and cleanſes all the paſſages of Urine. It caſts forth the ſtone in the bladder, if it be not too big for the paſſage, and the tartarous matter of which it is bred, which oftentimes cauſeth the

the ſame Symptomes with the *Stone* in the bladder; when yet there is no *ſtone* at all. Theſe are ſo frequent every year, its needleſs to multiply Examples, ſo as I ſhall mention but one for brevity ſake.

Mr. *Chriſtopher Keld* of *Newby* near *Scarbrough* had been many years ſubject to violent Fits of the Stone, and falling into one of his uſual Fits, he called to mind, that he had heard this water commended in the caſe, ſo as he ſent immediately for ſome bottles thereof, and drank betwixt two or three quarts, which within leſs then half an hour, cauſed him to void ſeveral ſtones, beſides much gravel, which gave him perfect eaſe, ſo as for ſeven years after he had not another Fit; but then it ceazing on him again, he applyed himſelf to the ſame Remedie with like ſucceſs. *Stone.*

But for a confirmed ſtone in the bladder, which is become ſo large that it cannot be voided, I think it altogether unſafe. *Caution.*

It

The Reliques of a Clap.

It is excellent good againſt the *Reliques* of a *Clap*, and cleanſes away the dregs of a *Mercurial* Method, ſafely ſtayes the *Gonorrhœa*, helps the piſſing of blood, and ſtrengthens the ſeminal veſſels, the malignity of the diſeaſe being firſt removed by due Medicines: Here again *I* could be copious.

Gonorrhœa.

A Gentleman that had got a *Clap*, having had the uſual Symptomes upon him many moneths, which had exceedingly impaired his ſtrength, committed himſelf for Cure to an able Brother of our Faculty and my ſelf: In a few weeks we took off all the pains & other Symptomes, only a *fluid Gonorrhœa* remained, which reſiſted medicines, even the moſt proper we could preſcribe, and that for ſeveral weeks after the virulency of the diſeaſe was gone, which we obſerved came from a great debility both in the concoctive and retentive faculty of the ſeminal veſſels: So the ſeaſon of the year coming on for drinking theſe waters, I adviſed him to *Scarbrough*, where within ten dayes he was perfectly cured, and ſince has begotten Children.

I know another who had got a grievous *Gonorrhœa*, which through the ſharpnes of the humour made ſuch a *corroſion* upon the neck of the *bladder*, that he *piſſed blood* with exceeding great pain, to the great abatement of his natural ſtrength; It had refiſted what advice he had met with in the Country, till coming to theſe waters he was perfectly cured in a very few dayes. *Another.*

It is good againſt many *diſeaſes of the Womb*, opening the obſtructions thereof, and cures the *green ſickneſs* in Maids, and *fits of the mother*, amends the complexion of women making them look with a ruddy freſh colour. It helps the overflowings both *white and red*, and ſuch as are ſubject to miſcarry, ſtrengthening the retentive faculty of the Womb exceedingly; It takes away *ſome cauſes of barrenneſs*, being frequently found to *further conception*, both in thoſe that having been long married never conceived, and in ſuch as after many years of intermiſſion were paſt all hopes of more Children; In both which caſes every year affords new Teſtimony. *Diſeaſes of the Womb.* *Furthers Conception*

Mr.

An Instance Mr. *Thomas St. Quintin* of *Flambrough Yorkeshire.* and his wife were seven years and an half marryed, during which time she had never conceived; Upon Report of the Efficacy and Vertue of the water, he brought her to *Scarbrough*; where she drank fourteen dayes; within a Month after she conceived, and brought forth a Son. Then having an interruption for four years he brought her to the waters again: After a fortnight or three weeks that she had left the waters, she conceived again, and brought forth a Daughter, both which are living and healthful children.

Another. Mrs *Eliz. Turner* of *Hutton Pagnel Yorkshire*, through obstructions fell into a great *swelling* and *hardnes* of her belly with *difficulty* of *breathing*, which gave too much cause to suspect a *Dropsy*: It had resisted medicines till coming to the waters which she drank fourteen dayes her belly fell, and she shortly after *conceived* with child, and brought forth a Son, having had no child before of seven years.

laying

In a word, if any intentions be to be performed in a Medicinal way, by allaying or mitigating ſome hot diſtempers, opening Obſtructions, evacuating morbifick humours by Urine or Siege, and ſtrengthening the inward parts, it may be fully and compleatly effected by this water, wherein it operates ſo ſafely, as I have very rarely obſerved any ill Symptomes to ariſe: Nor have I mentioned any diſtemper, of which I have not made particular obſervation, and moſt of them many times over; nor named any Perſons without their free and full conſents, expreſſed for the moſt part under their own hands, and in their own words. To conclude, it is of ſingular vertue for ſuch as have been long detained in a courſe of Phyſick, for the cure of ſome *Chronical and rebellious diſeaſe*, wherein eſpecially I think it to excel, having hereby (together with ſome few additional helps as the caſes required) attained to the cure of ſome maladies, that have wholly reſiſted all endeavours that could be uſed by others or my ſelf.

The Spaw at Malton.

Of like Nature with this is the *Spaw at Malton* within fourteen miles North-East from *York*, having imbibed much about the like quantity of Minerals, and may indifferently be used as succedaneous to it, by such as cannot reach *Scarbrough*, many good cures having been wrought by it; only it is not so pleasant to the palate, and also nauseous to weak stomachs, in respect that it is but a slow spring, and not so full of volatile spirits, nor affording water enough for many Drinkers, although in operation it is as strong as this.

Quest.

If it be demanded, Whether Children, old people, and women with child, may drink of this *Spaw*-water, or no?

Answ.

To the first, I know *H. ab Heers* saith, he saw a sucking child drink of the *Germane Spaw* with good success, and Dr. *French* allowes that at *Knaresbrough* to bee given to children of a year old; but I think it to no purpose to trouble them with it so young, since either they will not drink at all, or not above a spoonfull or two, which can make no operation at all, more then

Touching children.

by

by, cooling and moyſtning, which may be done as well by other Spring-water. But if a child be of four or five years, and be troubled with the ſtone or gravell, or ſome ſuch diſtemper, and will be perſwaded to drink of it, it may be very beneficiall, as I know by experience in ſeveral, that at four or five years old have been enticed to drink a quart of it in a morning with good ſucceſs and ſo continued for ſeverall days. Nevertheleſs if a younger child will drink of it, it will do no harm at all.

2. As for old people, they are to be judged of according to the temper and conſtitution of their bodies, eſpecially the ſtomack and bowells, for ſome are more vigorous then others that are younger by much, and of ſuch there needs no ſcruple, but if any old people do labour under a very feeble ſtomach, and a cold diſtemper of the bowells, and that upon triall made, they find their ſtomach not able to receive it without a manifeſt dejection of appetate, or ſome other ill Symptome, they ſhall do well to refrain: but for *Old people.*

such as find no inconvenience, they may go on to drink, only in a lesse quantity and somewhat warm. But as for those that labour under the incurable Symptomes of decrepit old age, whose naturall heat is but weak, let them not meddle with it, but content themselves with a good dyet, and a warm bed, and such cordialls or Kitchin Physick, as may help to repair their feeble Nature.

Of women with child. Touching *women with child*, difference is to be made according to the time they are gone with childe, as also according to the constitution of their bodies. For the water being both purgative and diuretick, it may seem not to be so safe for them, yet it is well known that many have drunk of it without the least detriment, some of whom have been young with child, and others many moneths gone.

Aph. 1. Sect. 4. Aph. 29. Sect. 5. I intend not here to enter into the controversie, whither at all, or how far women with child may be purged, *Hippocrates* forbids it in the three first and three last moneths, but allows it in the three

three middle moneths. And elsewhere he sayes, that if a great Lask happen to a woman with child, it puts her in danger of miscarrying, which we find true in our daily experience. Now I conceive purging must hurt them, because of the great agitation of the humors which is caused thereby, and the expulsive faculty of Nature which is then irritated, especially if it be caused by a Medicine that hath an acrimonious or malignant quality: and thus *Hippocrates* tells of one, that in her second moneth, having taken a Pill of *Elaterium*, fell into a violent Flux & died. But this water makes no such agitation of the humours, nor causes griping, nor hath any acrimonious or Malignant quality, to give any ground for such fears: Nevertheless because in the first moneths of gravidity Natures cords are tender, and so easily broken; and in the last moneths the motions of the childe are more strong, frequent and violent, and like fruit that is neer ripe, which soon falls, if the Tree be but a little shaken; I conceive it safest in the middle *Aph.* 34. *Sect.* 5.

months; to wit, in the fourth, fifth, and sixth. And yet in these also regard is to be had of the constitution of the body; for some are of such tender slippery bodies, especially such as have been subject to frequent abortions, that they can endure nothing; notwithstanding some causes of abortion may be cured by the *Spaw*, but then it is to be drunk when they are not with child. I could instance in many that were wont frequently to miscarry till drinking of this Water, after which they went constantly to their full time. Herein I advise them to consult some prudent Physician before they drink of it. But certainly in ordinary bodies if there be a redundancy of Cacochymick humours, it is a most proper and safe medicine, and may serve either to cure or prevent distempers that proceed from thence, in any month of their reckoning. And thus not onely the *Spaw-water*, but some other purging remedies we find may safely be administred to them, in such a case, if need be, in any month, as also saith Dr. *Primrose*, yet it

it must be done by a wise hand, although more safely in the middle months, for the reasons aboveſaid.

SECT. XIIII.

IT now remains that I give some directions concerning the use of this *Spaw-water*, and that in reference to a preparation of the body for it, right management during the time of drinking it, and what may be requisite to be done after it. *Directions for the use of the Spaw*

I know many go to *Spaw* not for necessity but pleasure, to withdraw themselves a while from their serious imployments, and solace with their friends; Such are but whets, not lets to business, and like the whetting of a tool, which sharpens it, and makes it cut the better. If such do drink without any preparation, it matters not, only let them not drink too much at the first, till it hath found passage, which perhaps it may do in an ordinary body within three or four hours, it being a sure working water. *Such as are in health need less preparation*

It may do good even to those that find no need, in regard there may be some latent obstructions in the body, or some lurking humours that may breed distempers afterwards, upon the accesse of some procatarctick or external cause, which being removed by it, may prevent some disease. And it is very ordinary in corpulent bodies especially to have such humours and obstructions, for whom this water is very proper, although they find no sensible need at all, for as much as such are near to a disease or sickness, as *Hippocrates* saith, and do need purgation.

Sect. 1. Aph. 3.

But as for such as find some decay of their health, by reason of some distemper hanging on them, there is great need of preparation, and that with reference to the nature of the malady, whether simple or complicated, the parts principally affected, the age and constitution of the Patient, the time of the disease whether in its growth, height, or declination, and the time of the year, all which are considerable. My advice is that no man go to the *Spaw* in such a case, but that he first know what he goes for, by a right un-

The Sickly must take advice.

understanding of his condition, and a due comparing the disease and the remedy together, that he may have some grounds to hope for good.

The best is therefore to advise with some learned Physician, who understanding throughly the nature of the malady, and also of the water, will be able fully to instruct him, whether it be a proper remedy or no for his condition. For though the water will not probably hurt any man that is in perfect health, yet it may do harm to such as are sickly, if it be not used aright. And it's hard, nay impossible for me, to lay down rules that may suit every mans particular case, there being as great variety and difference among them, almost as there are men.

Among these some will need less preparation, perhaps some gentle Eccoproticks may serve, being taken the night before the Patient begins to drink: Others whose obstructions are rebellious, and humours tenacious, or nature dull, may need some course of Physick; for want of a right understanding whereof,

some

some have got more hurt then good, and Others have gone away without that benefit, which else in all reason they might have reaped, and so b ought an ill report upon the water without a cause.

Note. And whereas this water has been said to be so succesful in the cases mention'd, it is not meant as if the water had been used alone, without additional helps of others Medicines, both preparatory and concomitant, or as if no thing had ever intervened, to give a check to our hopes. It will suffice any rational man that the water was the *causa sine quâ non*, which God Almighty blessed to these ends. I ordinarily find it requisite to furnish the Patient with some specifick remedies, that relate more peculiarly to the part affected, with reference to what complication of maladies I discerne, which I cannot so perfectly describe, without making this swell into a voluminous bulk, which I intend not.

Let blood. In some cases also I find it fit to let blood, at some time or other, especially in Plethorical bodies, or hot distempers, without which many times ob-

obſtructions will not yield to remedies. All theſe cannot be ſo well predetermined, but are beſt judged of by view and conference with the party.

It will be ſufficient to the wiſe, that I have ſaid ſo much of the nature and operation of this medicinall water, as that Phyſicians that never ſaw nor heard of it before, may be able well to judge of it, and give good advice to ſuch as conſult them with reference thereto.

The due manner of drinking.

Theſe things being premiſed, let ſuch as drink of the water, begin with it in the morning by ſix of the Clock or ſeven at the furtheſt, taking two glaſſes of half a pint a piece, intermitting a little ſpace of time betwixt one and the other; after which let the Patient walk about upon the ſands halfe an hour, (or otherwiſe ride on horſeback, or in a Coach) till he finds his ſtomach is a little emptier, the water being paſſed down into the bowells, then let him drink two glaſſes more, and ſo walk again, which will help to warm the water in the ſtomach, and further both its concoction and deſcent; or let him uſe ſome gentle exerciſe, ſo as

By degrees.

he

he do not provoke sweat, because that throws the water into the habit of the body, and hinders its passage through the bowells. And then after he finds his stomach capable of receiving more, let him drink other two glasses as before, not exceeding a pottle or five pints the first day in ordinary bodies, nor yet so much in weak bodies, unless they shall find it to passe freely, as usually it begins to do within two or three hours, & then such as have strong bodies, and capacious stomachs, may go a little further.

Not good to take too fast.

I cannot approve of taking the waters too fast, least the coldness thereof enfeeble the natural heat of the stomach, and provoke vomit, which otherwise it is not apt to do; unless the stomach be prone thereto, or full of flegmatick humours; and then though one do vomit, it doth no harm at all but good in cleansing the stomach.

The next day the Patient may go higher to two or three pints more, he having found a free passage the first day both by siege and urine, so as he finds no distention in the Hypochondres. Only

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it will be needful to have some stomachicall Lozenges, or powder to correct the windiness of the stomach, and preserve its naturall heat, or at least some Caraway-Comfits, which he may take some quantity of, betwixt every two glasses.

I would also have every one to take his full dose of water, by nine or ten of the Clock at furthest, that it may have time to pass down before dinner, least if the meat mix with the water, it do float in the stomach, and be washed down into the bowels unconcocted. Now its a token that the water hath passed through when the urine, which was pale and clear as the *Spaw water* it self, begins to look with a higher colour, which will usually be within two or three hours at most after the last dose: at least it will have done its work in the stomach, so as the whole Company may go to dinner by twelve of the Clock: but if any have such feeble stomachs that they cannot fast so long, they may take a messe of warm broth which is ever ready in the Innes. *Have done by 9. or 10*

And if any have such feeble bodies that they cannot walk to the *Spaw* being about *Feeble stomachs.*

about a quarter of a mile from the Town, such may drink it in their Chambers. And those whose stomachs are not able to take it cold may air it a little, observing the directions already laid down.

Salt meats not good.

A spare diet is best here, and that which is of easy digestion. I cannot approve of salt-meats, either Beef or Fish, although I discommend not that which is a little powdered, especially for such as have strong stomachs and are healthful, who need not be critical. But as for such as are sickly, they must be more wary, especially such whose stomachs are feeble in the concoctive faculty, since they are like here to fall into great variety of Sea-fish new and very well dressed, as *Turbut, Codde, Ling, Soles, Plaice, Whiting, Skate, Herring, Mackerill, Lobster, Crab*, &c. which are brought in by the Fishermen two or three times a week, only let such drink a glasse or two of Sack or Claret to further concoction, which I cannot but commend to all such as drink of these waters, to preserve the natural heat of the stomach, except such as labour under a hot distemper of the Liver, for

Variety of Sea-Fish is to be avoided.

whom

whom dry medicines in form of an Electuary or Lozenges are more proper, which do moderately warm the ſtomach, and not at all inflame the Liver.

I altogether diſallow of Sallets of cold herbs, in regard they are hard of digeſtion, and are apt to float in the ſtomach with the water, and paſſe down unconcocted, and breed many diſeaſes. *Sallets not good.*

Nor do I approve of drinking at all of the *Spaw* in the afternoon, both becauſe it uſually works ſufficiently with what was drunk in the morning, moving the body even all the day: as alſo becauſe it doth precipitate the meat out of the ſtomach too ſoon, before compleat concoction be made, and will not be caſt off the ſtomach before ſupper; & may diſturb the Patient in the night, or fly into the habit of the body, and breed the Gout or ſome other moiſt diſeaſe of the joints: on which account I cannot allow it to be drunk at bed time; although Dr. *French* commends a glaſs of the *Spaw* at *Knaresbrough* to be taken then to cloſe the ſtomach, and ſuppreſs fumes; which I think are rather raiſed by it, ſince through ſleep it. *Not good to drink in the afternoon.* *Pag.* 104.

it must of necessity lie the longer in the stomach, and gathering heat, send up vapours, which will oppress the brain.

I would have the afternoon spent either in some pleasant discourse, or walking about or riding, or some innocent recreation, as bowling, &c. and sleep, by all means, to be avoided.

If at any time it shall so happen that the water doth not find a free passage, so as it causes distention & pain in the belly, difficulty of breathing, or giddiness in the head, it may be helped by a carminative clyster made of the *Spaw*-water, in which may be decocted or infused some *Hydragogue*, or some Species may be dissolved in it, which we use for purging of watery humors, according as the greatness and urgency of the Symptome, or the strength of the Patient shall admit. Or if some Physician bee present, he may administer some Pills or other purging medicine, that may answer the indication.

How long it is fit to drink.

As for the time how long it may be convenient to drink, that must be suted according to the greatness of the malady.

and

and the ſtrength of the Patient. Such as have Cacochymick bodies, which are full of bad humours; or melancholick, or others whoſe obſtructions are great, and humours tenacious, may ſtay longer then thoſe that have thin bodies, and which are eaſily moved, in which particular the ſafeſt way is to follow the advice of ſome Phyſician there preſent. I have ſometimes drunk of it not for neceſſity but company, or to make ſome little evacuation from flegmatick humours, being of an Athletick conſtitution, when within three days I found ſo great an agility and cheerfulneſs of body and mind more then I had before, as I have wondered at it, that if I had ſtayed a fortnight, I could not have expected more benefit.

They ſtay long at the Germane Spaw.

I know the *Germane Spaws* are wont to be drunk for many weeks, yea moneths together. Dr. *Heers* in his *Spadacrene*, tells of one *Ludovicus Hagerus*, who for the ſtone in the bladder drank of the *Spaw* every morning three hundred and fifty ounces, which is more then three gallons, for above ten weeks together, and found much benefit in it, it carrying away the

mucous matter with which the ſtone was inveloped, and waſted the ſtone into gravel. Alſo of an old man of *Antwerp*, that had been long troubled with an ulcer in his kidneys, for which he had frequented the *Spaw* three years, and drank abundantly of it ſix moneths together each year, and found a Cure. And *Frambeſarius*, who was Phyſician to the *French* King; thinks the more any one drinks of the *Spaw* the better; if it doth but paſs away freely: and in my own obſervation, I have ſeen more inconveniences in drinking ſparingly (for whom it was fit) then in plentiful drinking.

This laſt year one *John Hill* of *Eaſton Yorkeſhire* a Sea man, ſuſpecting he had gotten poyſon, drank eighteen quarts every morning for a week together, without any harm, or the leaſt ill Symptome.

The Germane works not ſo well as this.

But as I cannot approve of ſuch quantity, ſo nor of ſo long a ſtay at this water as they do at the *Germane*, in regard it conſtantly paſſes through both by ſiege and urine more freely then the *Germane* do, which I perceive by Dr. *Heers* own confeſſion, in ſome bodies provokes not a

Pag. 122.

ſtool

ſtool once in eight dayes, even in thoſe that before were wont to retrograde once or twice a day ordinarily, without taking any thing to ſtimulate nature. And therefore although I can agree with *Fran-beſarius*, that a greater quantity may be drunk of it, becauſe it paſſes more freely; yet I think it not needful to ſtay ſo long, it perfecting its operation in a leſs time.

I think it much better if a diſeaſe be rebellious, that the Patient after a continuance at the *Spaw* a moneth or five weeks, do leave off the waters a while, and return to his ordinary Diet and ſtate of living, and then after ſuch reſpite given to nature, apply himſelf to the waters again. And I have often found it neceſſary ſo to adviſe, thereby attaining to a cure of many diſeaſes, which at one proceſs could not poſſibly be effected, as in ſome of the caſes afore mentioned. *Good to intermit ſome times.*

If any man finds, that after benefit once had by the waters, he begins to decline again in his health, as that his appetite or concoction decay, or the wa- *When fit to leave off.*

ters paſs not ſo well as formerly, but cauſe diſtention either in the belly or the veins, and ſo bring on a difficulty of breathing, or pain in the head, or the like; it is then time wholly to deſiſt, and proceed no further, or at the leaſt to take the advice of ſome Phyſician there preſent, who may remove the obſtruction, if the end for which he came be not yet attained.

When the beſt ſeaſon to drink.

As touching the ſeaſon of the year, when it may be moſt proper for to drink of the *Spaw*: The Summer months are the beſt, when the Weather is warm and the ſeaſon dry, to wit, from the begining of *May* or ſooner in dry years, to the begining of *September*, it being uſually the dryeſt ſeaſon, and that for ſeverall reaſons,

Summer the fitteſt ſeaſon.

Firſt, becauſe in Summer the water is ordinarily more ſtrong of the Mineralls, then at other ſeaſons when plenty of wet falls, for in dry weather there is no mixture of new moyſture, but the water comes immediately from the Mineralls fully and ſtrongly impregnated, whereas it is very obſervable that after a great rain

rain, the water is weaker, notwithſtanding it lyes ſo deep within the earth.

I confeſs the water is ſtrongeſt of the Minerals in Winter after a long and durable froſt, which having a long time together ſhut the pores of the earth, ſo as no moyſture could deſcend, and the heat therby increaſed in the ſubterraneal Channels, & conſequently a better concoction wrought, muſt upon that account be ſtronger both in taſte & operation, of which I have had frequent experience. I adviſed it not long ſince in *January* to a Lady of good quality, to cleanſe her after a recovery of the ſmall Pox, ſhe having an incorrigible body for Phyſick, ſo as a ſtrong doſe enough for any man would ſcarce move her at all, and the water wrought effectually, the drinking about a gallon every day.

The Spaw ſtrongeſt in a froſty Winter

Lady M.

And may be taken then.

The *Germine Spaws* are wont alſo to be drunk in Winter frequently, ſome chooſing that Seaſon rather then any other, becauſe of the ſtrength of the water. And hence it was that the *Duke* of *Mantua* give it in charge to *Rycius* & *Hab Heers*, two Germane Phyſicians that

lived near the *Spaw*, to send him every Christmas Eve two hundred flagons of *Spaw-water* taken out fresh after a long frost, which they constantly did observe, finding the water at that time stronger, then at any time in the hottest Summer.

Another reason why I think it best to be drunk in Summer is, because at that season the inward passages of our bodies are more open and pervious then in Winter, so as the water may passe much more freely.

And lastly, because one may drink more liberally in Summer, our bodies being more dry, and consequently we more thirsty then in Winter; besides it is more pleasant travelling, and residing at *Scarbrough* in Summer then in Winter.

Object. I know the grand Objection which we meet with too frequently in our other practise also, concerning the Dog-dayes, that they are not so fit a time for Physick, taking its rise from an Aphorism of *Hippocrates*, ὑπὸ κύνα καὶ πρὸ κυνὸς ἐργώδεες αἱ φαρμακεῖαι, thereby forbidding purging of the body, as they

they ſay, ſo as naither the preparatives nor the water it ſelf can be ſafely taken.

This hath been found a killing Objection to many in *England*, who falling ſick of acute Fevers, which at this ſeaſon of the year, are more frequent then at other times, are wont to defer the looking for help (a fault too common at all ſeaſons) becauſe of the Dog days, till that which at the beginning might eaſily have been cured, by delay doth many times become incurable. Sure I am *Hippocrates* never ſaid or thought that the Dog days, are unfit time for Phyſick, nor did *Galen* in his Comment underſtand him in that ſenſe; He onely ſays, Purgations are difficult about that time of the year; that is, they cauſe ill Symptomes, as Fevers, Gripings, diſſolution of the Spirits, which are already enfeebled by the exceſſive heat of the weather, imputing it not to the influence of that Star, but to the uſual heat that happens at that time, the heat alſo not ariſing in the leaſt reſpect from the nature of the Star, it ſelf, but from the Sun, which is now again running over the ſame degrees

Answer.

Of the Dog-dayes

Hipocrates explained

of the Ecliptick in *Leo*, that it had done before in *Taurus*, in *July* and *August*, which it did in *April* and *May*.

The Dog-Star has no malignant influence.

It cannot be from any extraordinary malignant influence that is in the Dog-star more then others, it being agreed on all hands by those that are versed in *Astrology*, that there are many other Constellations, and parts of heaven, which are more full of malignity then it is; as *Cor Scorpionis*, which arises with the Sun in the latter end of *November*, being also within a few degrees of the body of the Sun. So *Caput Meausæ* or *Argol*, neer unto which the Sun passes in the latter end of *April*. And the *Dragons Taile* an imaginary point of heaven full of enmity, by which the Sun transits once a year, besides the monthly conjunction of the Moon with them all: I say *Hippocrates* cannot be thought to intend the Malignant influence of the Dog-Star to hinder the working of Physick, while he that knew the rest as well as this, never mentions them at all, which if they were observed would imply the unfitnesse of every season, and consequently very few days

days in the year would be proper for Phyſick.

It was indeed the heat of the weather which he reſpected, which happens with us about the Coſmical riſing of the Dog Starre, to wit, towards the later end of *July*. But neither is the heat ſo intenſe in this our Climate, as that for it we ſhould abſtain from uſing remedies when there is need, our *July* and *Auguſt* not being ſo hot as *April* and *May* are in the Iſland of *Coos*, (which is called in Maps *Lango*, and by its owners the *Turks Stancora*, not far from *Rhodes*) where *Hippocrates* lived. Now although nothing is more neceſſary to be obſerved by Phyſicians then the diſpoſition, riſing and ſetting of eminent Stars, the bodies and ſtomachs of men receiving mutation according to their motions, to which reſpect is heedfully to be had in giving of Phyſick, as ſaith *Hippocrates* elſe where; yet there is not ſo much regard to be had, as that either this Star or the heat ſhould make us wholly abſtain, when a diſeaſe requires it; Learned Phyſicians knowing well enough how to muzzle that

Phyſick may be uſ'd in the Dog-dayes.

De Aere in principio.

that Dog, and temper the heat with medicines ſutable, we having purging remedies as fit for hot weather as for cold and temperate, ſuch as if *Hippocrates* had known, I verily think hee had never mentioned that Aphoriſme; his purging medicines being exceeding hot, violent, and of a malignant & corroding nature, which we have very rarely any occaſion to uſe (and then ever better corrected) and do wholly lay aſide in the heat of Summer.

Neithes is *Hippocrates* in that Aphoriſm laying down rules for giving of Phyſick, but only reporting his obſervation concerning the manner of working of medicines, which he ſays, is with ſome difficulty and bad Symptomes, and well might it be ſo with his medicines in that Climate; but what is that to us, while our own obſervations are, that ours do operate without any difficulty; And whoſoever ſhall obſerve the operations of Medicines in the hand of any able & *knowing* Phyſician at this time of the year, ſhall acknowledge them as ſafe and ſucceſsfull, as that which he gives at any other ſeaſon.

with good ſucceſs.

And

And more particularly this is found true in Mineral waters, such as I am now treating of, which are (as I said) the best in hot weather, both in regard of their more eminent participation of the strength of the Minerals; as also because of our bodies, which are more open and free for their passage; and we can also drink more plentifully in the Summer moneths, which is necessarily to be done by such as go to the *Spaws*. If any require further satisfaction concerning this point of the *Dog-dayes*, I referre him to Dr *Primerose* his Book of *Popular Errours*; as also to Doctor *Browns* elaborate and learned Tractate concerning *Vulgar Errours*, where he may be abundantly convinced. *lib.4. c.11* *lib.4. c.13.*

Directions for such as drink the Winter

Nevertheless, if any mans condition require his drinking in Winter, let the water be a little ayred, that the extremity of the cold may be taken off, and let a good fire be made to warm the Chamber, least it happen to him, as *Fallopius* found in himself and others, by drinking of the *German Spaws* excessively cold in Winter, who felt some paralytick

tick and convulsive motions after it.

Quest. If any enquire of me, whether this Spaw-water will endure to be carried into the Country at distance, and keep its vertue,

Answ. I Answer, *Purius ex ipso fonte hibuntur aquæ*: It is certainly the best at the Fountain, having there a pure azure colour, and a pleasant acidity from the spirits of the Minerals, both which are lost when its carryed far: Yea so notable a difference there is, that such as have accurate Palates, do wholly distrelish it, even at the Town of *Scarbrough*, when it has been taken up at the Fountain not half an hour before, and will rather in a *rainy morning* hazard a wetting, then submit to drink it at the Town. And when the Spring-Tides happen to overflow it in a morning; if upon that account, the women that bring it to the Inns, for some few that drink it in their Chambers, shall fetch it in over night to have it in readiness, every one can easily discern it by reason of the loss of its spirits, and discover the fraud. Nevertheless its constantly carryed to *York*, and *Hull*, thirty miles from *Scarbrough*, also

The Spaw water best at the Fountain.

alſo into *Lincolnſhire*, and *Durham*, ſixty miles, and they find it to work; for though the ſpirits are exhaled, as will eaſily appear to any obſervant perſon, and ſome of the Minerals waſted (as I made out before) there is yet remaining ſuch a body of them, as will carry them through, though not ſo well as at the Fountain.

Nay I queſtion not, but if it ſhould be kept till it be fetid and ſtink, it would yet operate, and perhaps the more, for ſo water that is corrupt, will looſe the belly, but without all peradventure, it would trouble the ſtomach, and corrupt the blood, as Sir *Drayner Maſſingberd* well obſerved. But it is a vulgar conceit, that ſo long as it purges the belly, they account it ſufficient, & do content themſelves to drink it, even when it has got ſuch a degree of putrefaction, that they are forced to hold their noſes while they drink; and I ſuſpect even by the advice of ſome Phyſicians.

My Counſel is to all ſuch as deſire to preſerve the Craſis and vigour of their ſtomachs, or that labour under any *Hy-*

po-

pochondriack Affect, or the Scurvy, or the Stone, wherein the most subtile spirits are necessary, if they be able of body to travel thither, and in Purse, that they take it, if possibly they can, at the Well; for though it will still purge being carryed far, yet I never saw nor heard of any considerable Cure done by it at distance. But as for such as through feebleness of body are not able to travel, they may get it brought to them into the Country, but best of all in well stopped Bottles to preserve the spirits better, having been incouraged to the use of it by some able Physician, who may watch over and correct ill Symptomes.

Compared with the Germane.

And this seems to be of like nature with the principal *Spaw* in *Germany*, called by the name of *Powhont*, which is wont to be carried into many Countries, and was brought into *England* to Count *Bellemont*, when he was sent Embassador from *France* to King *James*, and was found good, which might well be supposed to be done in less then ten days. And both arise from the bottom of a great Rock, having imbibed almost the very same

ſame Minerals, only I am ſure this has no Lead nor Ocher, and is not the worſe for it, having alſo more ſtrength of the Minerals then the *Powhont*. But when Doctor *Paddy* our Countryman, and Doctor *Heers* diſtilled it, they found nothing but Rubrick, Ocher and a little Vitriol, as Doctor *Heers* himſelf relates. *Spad. pag.* 34.

The other which they call *Sauvenir* partakes much of the ſpirits of Minerals, but hath very little juyce or ſubſtance, yet is good at the Fountain, but looſes its ſpirits and vertue being carried abroad, in ſo much as *Frambeſarius* after two days journey found it like common water, whereas that of *Powhont* was ſtrong and quick.

I advice thoſe that have drunk long, to leave off by degrees as they began, and to purge watery humours, either at *Scarbrough*, or as ſoon as they come home, & afterwards to uſe a temperat diet.

And whereas perhaps there may be ſome that have thought it an Empirical thing, and to exceed belief, that this *Spaw* water ſhould have cured ſo many maladies as I have reckoned up, and thoſe

of

of very diffetent qualities, I ſuppoſe the teſtimony of theſe Perſons of Quality in their proper caſes, may ſuffice to give ſatisfaction to any Rational man, without any further accumulation of inſtances, which were eaſy enough for me to do. Beſides I refer ſuch to the writings of *Fallopius*, *Solenander*, *Geringus*, *Ryetius*, *Bezanſonius*, *H. ab Heers*, who have treated of the waters of *Germany*, and elſe where; as alſo to ſeveral of our own Country men, as D. *Dean*, Mr. *Stanhope*, Dr. *French*, Dr. *Rooſy* and others, who have writ of ſeveral *Spaws* in *England*; moreover let them inform themſelves well, concerning the cures that have been done by the waters at *Epſam*, *Tunbridge*, *Barnet*, *Briſtol*, *Knaresbrough*, *&c.* This of ours comming not ſhort (if not much exceeding) the beſt of them all, either *Germane* or *Engliſh*.

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Felix qui potuit boni
Fontem viſere lucidum.

Boeth. de conſolat. Philos. metr. 2. l. 4.

FINIS.

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